IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

ALFONSO CIOFFI, *et al.*, **Plaintiffs,** **vs.** **GOOGLE LLC,** **Defendant.**	Civil Action No. 2:13-cv-103 [JRG/RSP]

DEFENDANT GOOGLE LLC'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW REGARDING THE INVALIDITY OF THE PATENTS-IN-SUIT UNDER 35 U.S.C. § 251

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Pursuant to the Court's Memorandum Opinion and Order granting in part Defendant Google LLC's ("Google") motion for a new trial (D.I. 319), Google submits its Proposed Findings of Fact and Conclusions of Law regarding invalidity under 35 U.S.C. § 251.

Google has filed a separate motion for clarification (D.I. 320), pending before this Court, that seeks clarification as to whether the Court's March 29, 2018 Order requires a bench trial at which the parties will present evidence and live witness testimony on Google's § 251 invalidity defenses. To the extent the Court conducts a bench trial at which the parties will present evidence and live witness testimony, Google requests that the parties be permitted to submit revised proposed findings of fact and conclusions of law after the bench trial that would include citations to any new evidence presented at the bench trial.

I. PROPOSED FINDINGS OF FACT

A. Procedural Background

1. Plaintiffs Alfonso Cioffi, Megan Rozman, Melanie Rozman, and Morgan Rozman ("Plaintiffs") filed this action against Google on February 5, 2013. D.I. 1. In their original complaint, Plaintiffs asserted infringement of four related reissue patents: U.S. Reissue Patent RE43,103 (the "'103 Patent"); RE43,500 (the "'500 Patent"); RE43,528 (the "'528 Patent"); and RE43,529 (the "'529 Patent"). *Id*. at ¶¶ 10-14. Plaintiffs alleged that Google infringed these four patents based on features of the Google Chrome web browser. *Id*. at ¶¶ 15-26.

2. The four patents are all reissues of U.S. Patent No. 7,484,247 (the "'247 Patent'). PTX-001 ('247 Patent); PTX-002 ('529 Patent); PTX-003 ('500 Patent); PTX-004 ('528 Patent); D.I. 1, Ex. A ('103 Patent). The four reissue patents and the '247 Patent are all titled "System And Method For Protecting A Computer System From Malicious Software" and name the same inventors, Allen F. Rozman and Alfonso J. Cioffi. *Id*.

3. On August 28, 2014, the Court issued a Claim Construction Memorandum and Order that, among other things, construed the term "web browser process," which is recited in all asserted claims of the '500, '528, and '529 Patents, to mean a "process that can access data on websites." D.I. 71 at 14-15. The Court's Order also stated that the "'web browser process' must be capable of accessing a website without using another web browser process." *Id.* at 14.

4. On November 26, 2014, Plaintiffs filed a stipulation and proposed final judgment of non-infringement based in part on the Court's construction of "web browser process." D.I. 99. The Court entered the proposed judgment on December 2, 2014. D.I. 104.

5. Plaintiffs then appealed the Court's claim construction of "web browser process" to the Federal Circuit. D.I. 105. On November 17, 2015, the Federal Circuit reversed this Court's construction of "web browser process." *Cioffi v. Google, Inc.*, 632 F. App'x 1013 (Fed. Cir. 2015). Although the Federal Circuit agreed with the Court's construction of "web browser process" as a "process that can access data on websites," the Federal Circuit disagreed with this Court's finding that a "web browser process" must be capable of accessing website data without using another web browser process. *Id*. at 1021-22. The Federal Circuit remanded for further proceedings pursuant to its decision. *Id*. at 1023-24.

6. On remand, the parties proceeded through discovery, pretrial, trial, and post-trial proceedings. During the pretrial proceedings, the parties jointly dismissed their allegations as to the '103 Patent. D.I. 179, 183. This left the '500, '528, and '529 Patents as the remaining patents at issue (collectively, "Patents-in-Suit"). Plaintiffs asserted four claims from these patents at trial: '500 Patent, Claim 43; '528 Patent, Claims 5 and 67; and '529 Patent, Claim 49 (collectively, "Asserted Claims").

7. A jury trial was conducted from February 6 to 10, 2017. D.I. 263-273. At trial, Google's expert Dr. Michael Kogan and Plaintiffs' expert Dr. Hubert Dunsmore testified on, among other things, § 251 invalidity issues. *See* D.I. 268 (Trial Tr. 2/8/17 pm); D.I. 270 (Trial Tr. 2/9/17 am); D.I. 271 (Trial Tr. 2/9/17 pm).

8. Following the jury trial, the jury returned a verdict finding that: (1) Google infringed the Asserted Claims; (2) the Asserted Claims were not invalid under § 102 and/or § 103 based on the prior art identified at trial; (3) the Asserted Claims were not invalid under § 251; and (4) Plaintiffs were entitled to damages. D.I. 259. On September 15, 2017, the Court entered a Final Judgment based on the jury's verdict. D.I. 308.

9. In post-trial proceedings, Google filed a Motion for Post-Trial Relief on Invalidity Under 35 U.S.C. §§ 102, 103, and 251. D.I. 292. Google argued, among other things, that a new trial should be granted on all issues because § 251 issues should not have been presented to and decided by the jury. *Id.* at 2-5. Google also argued that the Asserted Claims are invalid under § 251's rule against recapture and original patent requirement. As to recapture, Google argued that '500 Patent, Claim 43 and '528 Patent, Claim 67 improperly recaptured the surrendered subject matter of a system with just one processor. *Id*. at 6-14. As to the original patent requirement, Google argued that the specification fails to clearly and unequivocally disclose: (1) limitations of all Asserted Claims requiring two or more "web browser processes"; (2) limitations of '500 Patent, Claim 43 and '528 Patent, Claim 67, encompassing an embodiment with only one processor; (3) limitations of '500 Patent, Claim 43, '528 Patent, Claim 67, and '529 Patent, Claim 49, requiring that a "first web browser process" pass data to a "second web browser process"; and (4) limitations of the '529 Patent, Claim 49, requiring a "first web browser process" to initialize a "second web browser process." *Id*. at 14-20.

10. On March 29, 2018, the Court granted in part Google's motion for a new trial and ordered that the final judgment be vacated, the jury verdict be preserved except as to invalidity under § 251, and that a bench trial be held on § 251 issues. D.I. 319. The Court also ordered that the parties submit proposed findings of fact and conclusions of law on § 251 issues within 30 days of the order. *Id.*

B. The Original '247 Patent's Specification And Claimed Invention

1. The '247 Patent Disavows Prior Art Software-Based Solutions As Inadequate

11. The Patents-in-Suit are reissues of the '247 Patent, the initial application for which was filed on August 7, 2004. PTX-001; PTX-002; PTX-003; PTX-004. The Patents-in-Suit and '247 Patent share a common specification. *Id.*

12. The '247 Patent is directed to a "system and method for protecting a computer system from malicious software." PTX-001 at 1:6-7, 2:1-2. The '247 Patent explains that with the growing usage of the Internet and networked services, "malicious software generally known a[s] malware" had emerged as a significant threat to computer users. *Id*. at 3:46-47. When downloaded to a user's computer, malware "interferes with the smooth operation of the computer system, and in the extreme, can lead to the unauthorized disclosure of confidential information stored on the computer system, significant degradation of computer system performance, or the complete collapse of computer system function." *Id*. at 3:57-62.

13. The '247 Patent contends that prior art techniques for combating malware were inadequate. It asserts, for example, that "[t]he most common state-of[-]the-art solutions for preventing malware infiltration are software based, such as blockers, sweepers and firewalls, for example." *Id*. at 5:51-54. But these techniques were inadequate because "anti-malware programs

. . . can only detect known malware that has already been identified (usually after the malware has already attacked one or more computers)." *Id*. at 5:62-65.

14. The '247 Patent explains the "basic flaw" with prior art techniques was that all "files must be resident on the computers main processor." *Id*. at 6:25-27. Thus, if malware reaches the computer's main processor, it can gain "access . . . to non-volatile memory and other basic computer system elements." *Id*. at 6:27-29. Similarly, the '247 Patent asserts that by allowing software programs to share a common processor and memory resources, malware can easily spread and infiltrate other parts of a user's computer: "The inherent problem with existing architectures is that resources, such as RAM, or a hard disk, are shared by programs simultaneously, giving a malware program a conduit to access and corrupt other programs, or the O/S [Operating System] itself through the shared resource." *Id*. at 5:40-44.

15. The '247 Patent identifies the circumstance where an untrusted "network interface program (a browser, for example) is resident on the same processor as the O/S [Operating System] and other trusted programs, and shares space on a common memory storage medium." *Id*. at 6:57-60. In this circumstance, malware can "circumvent[] software security measures to . . . corrupt[] critical files on the shared memory storage medium." *Id*. at 6:62-64.

16. In view of the alleged deficiencies of prior art approaches and the risks presented by allowing programs to execute using a shared processor and common memory resources, the '247 Patent contends that "what is needed in the art is a means of isolating the network interface program from the main computer system such that the network interface program does not share a common memory storage area with other trusted programs." *Id*. at 7:1-4. For example, a "network interface program" such as a web browser program "may be advantageously given access to a

separate, protected memory area, while being unable to initiate access to the main computer's memory storage area." *Id*. at 7:5-8.

2. The '247 Patent's Hardware Isolation Solution Uses Two Processors And Two Separate Memory Spaces

17. Consistent with its contention that "what is needed in the art is a means of isolating the network interface program from the main computer system," the '247 Patent discloses a hardware-based security architecture that isolates the user's sensitive files from potential malware downloaded from a network. Figure 1 below depicts this architecture in a "computer system 100," which may be a "personal computer (PC) system, a server, a portable computer, such as a notebook computer, or any data processing system, a personal digital assistant (PDA), [or] a communication device such as a cell phone." PTX-001 at 9:30-37. The computer system 100 includes two processors and two memory areas: (1) "a first processor 120 (P1)" connected to a "first memory and data storage area 110 (M1)" and (2) a "second processor 140 (P2)" connected to a "second memory and data storage area 130 (M2)." *Id*. at 9:37-39, 10:29-37.

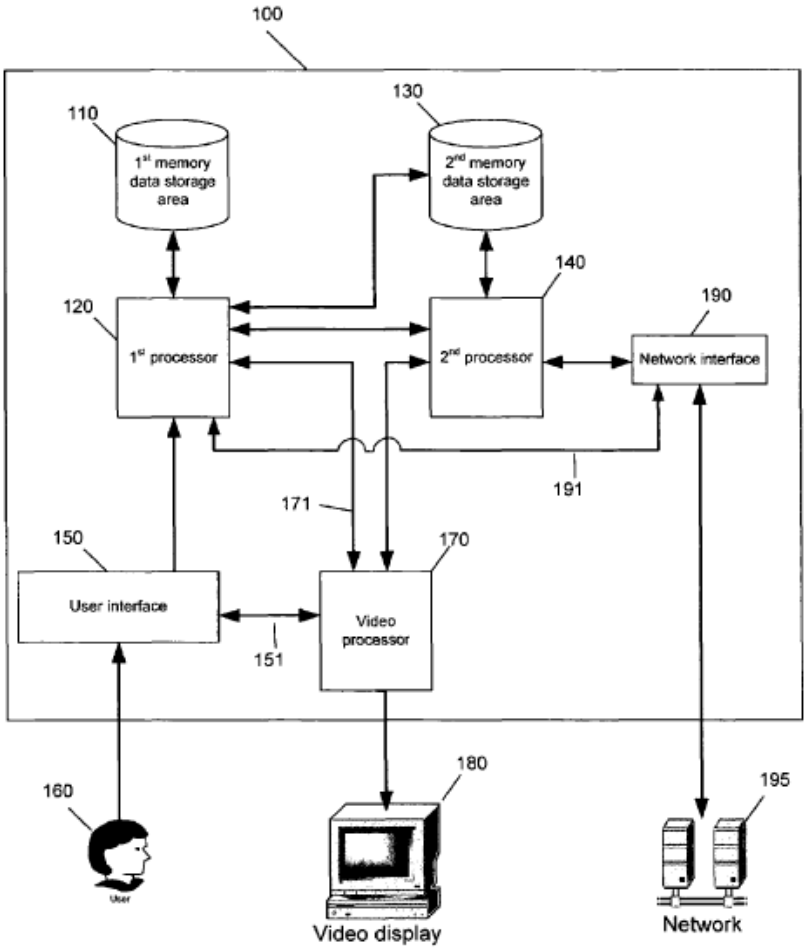

Fig. 1

18. According to the specification, P1 and P2 are physical hardware processors:

> P1 100 may comprise, for example, a microprocessor, such as a Pentium® 4 processor, manufactured by the Intel Corporation, or a Power PC® processor, manufactured by the IBM Corporation. Other electronic data processors manufactured by other companies, including but not limited to electronic data processors realized in Application Specific Integrated Circuits (ASICs) or in Field Programmable Gate Arrays (FPGAs), are within the spirit and scope of the present invention.

Id. at 9:39-47.

19. Similarly, "second processor 140 (P2) . . . may comprise any electronic data processor, such as the devices previously described as applicable to first processor 120." *Id*. at 10:31-34.

20. The ’247 Patent asserts that having two physical processors (first processor P1 and second processor P2) and their associated two memory areas (first memory M1 and second memory M2) as arranged in Figure 1 prevents malware from spreading and harming the user’s computer. *Id*. at 10:38-43. In particular, the arrangement “protect[s] [first] memory 110 from malware initiated intrusions, and prevent[s] malware from initiating unwanted processes on first processor 120.” *Id*. This protection of first memory M1 110 and first processor P1 120 is “accomplished by using second processor 140 to isolate 110 and 120 from network 195” because “[second processor] P2 140 is incapable of initiating access to memory storage area M1 110.” *Id*. at 10:41-46. The patent contends that “any malware that has intruded the [second memory and second processor] 130-140 system is thus confined to the 130-140 system, and” cannot “corrupt[] data contained on M1 110.” *Id*. at 10:58-63.

21. The ’247 Patent describes a use case scenario where a web browser downloads malware to the computer system 100 of Figure 1. In this scenario, a user “connect[s] to network 195 via for example, a browser program such as Internet Explorer or Netscape Navigator.” *Id*. at 10:66-11:1. But rather than running the web browser program on the first processor P1 120, the “1st processor 120 instructs 2nd processor 140 to initiate the protected process [i.e., the web browser program].” *Id*. at 11:4-6. Because the web browser program is initiated and run on only the second processor, only the “[s]econd processor 140 . . . interacts with the network 195 via network interface device 190, receiving and transmitting the data necessary to execute the desired protected process, such as browsing the internet or communication via e-mail.” *Id*. at 11:6-11. In effect, “[s]econd processor 140 and memory 130 act as a separate computer system, interacting with network 195 while isolating network 195 from the first processor 120 and memory 110.” *Id*. at 11:11-14. As a result, “if any malware is downloaded from network 195, it is stored in memory

130, and/or run as a process on second processor 140," and that malware has no "access to memory 110 or first processor 120." *Id*. at 11:39-46. "Any malware infection is thus confined" to the separate computer system with second processor P2 140 and memory M2 130. *Id*. at 11:46-50.

3. Figure 6 Applies The Claimed Invention To Online Gaming

22. The '247 Patent describes an application of the computer system 100 in Figure 1 for online gaming. As background, the patent explains that "[i]nteractive network processes such as interactive gaming have become very popular in recent years." *Id*. at 14:3-11. Using a network, "[i]nformation about the current and new state of the game is exchanged between various users' computer systems, often in real time." *Id*. at 14:14-17. But the network connections used for exchanging information for online games "may become a conduit for malware practitioners to exploit, allowing malware to be downloaded onto a user's computer during a gaming session." *Id*. at 14:21-24.

23. Using Figure 6 below, the '247 Patent explains how the computer system 100 in Figure 1 with two processors (P1 120 and P2 140) can be applied to "online gaming" to prevent malware from harming the user's computer. *Id*. at 14:28-45.

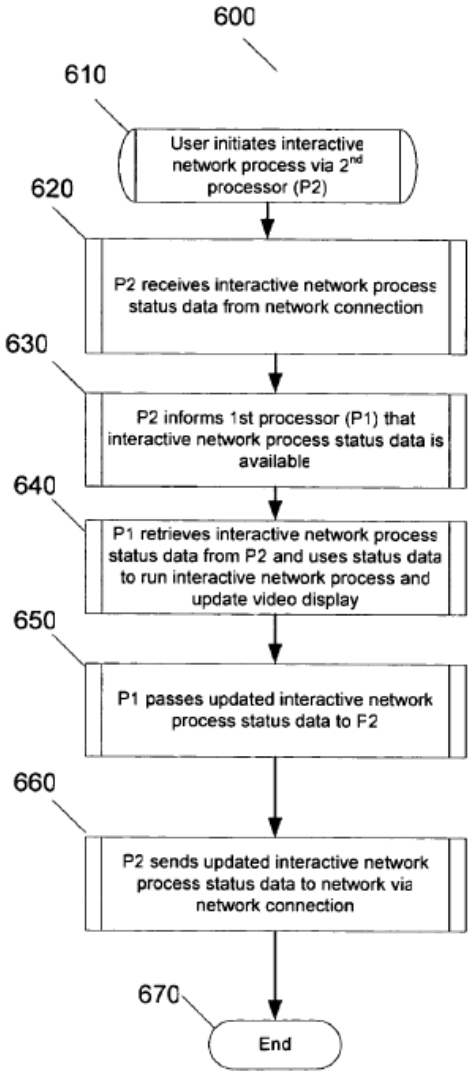

Fig. 6

24. The process begins with initiating "an interactive network process via 2nd processor P2 140 (step 610)" and then "P2 140 receiv[ing] interactive network process status data from network connection (step 620)." *Id*. at 14:31-34. Then, "P2 140 informs 1st processor P1 120 that interactive network process status data is available (step 630)," at which point, "P1 120 retrieves interactive network process status data from P2 140 and uses the status data to update the interactive network process and update video display (step 640)." *Id*. at 14:34-39. "P1 120 then passes the updated interactive network process status data to P2 140 (step 650)" and "sends the

updated interactive network process status data to the network via network connection 195 (step 660)." *Id*. at 14:39-42.

25. At trial, named inventor Mr. Cioffi and Plaintiffs' expert Dr. Dunsmore both testified that "P1" and "P2" in Figure 6 and related text refer to the same first processor P1 120 and second processor P2 140 that the specification first introduces with respect to Figure 1. *Id.* at 14:31-36; D.I. 263 (Trial Tr. 2/6/17 pm) at 139:8-140:7 (Mr. Cioffi affirming that "P1" and "P2" in Figure 6 are the processors of Figure 1); D.I. 271 (Trial Tr. 2/9/17 pm) at 37:7-38:3 (Dr. Dunsmore testifying that "Figure 6 describes using the processors 120 and 140 of Figure 1").

4. Figure 9's Embodiment Is Directed To A Processor Chip With Multiple Processor Cores

26. Figure 1 of the '247 Patent depicts the first processor P1 120 and second processor P2 140 as physically separate processors. Figure 9 of the '247 Patent, excerpted below, depicts an alternative embodiment where the first processor and second processor are both included on a single physical chip. As the '247 Patent explains:

> Processor 960 may further comprise multiple processor cores, illustrated by 1st processor 920 and 2nd processor 940. It is understood that processor 960 may contain more than 2 processor cores. Microprocessors manufactured with multiple processor cores are becoming common in the industry, and such multi-core processors may be particularly advantageous when used in accordance with the present teachings.

PTX-001 at 16:10-18.

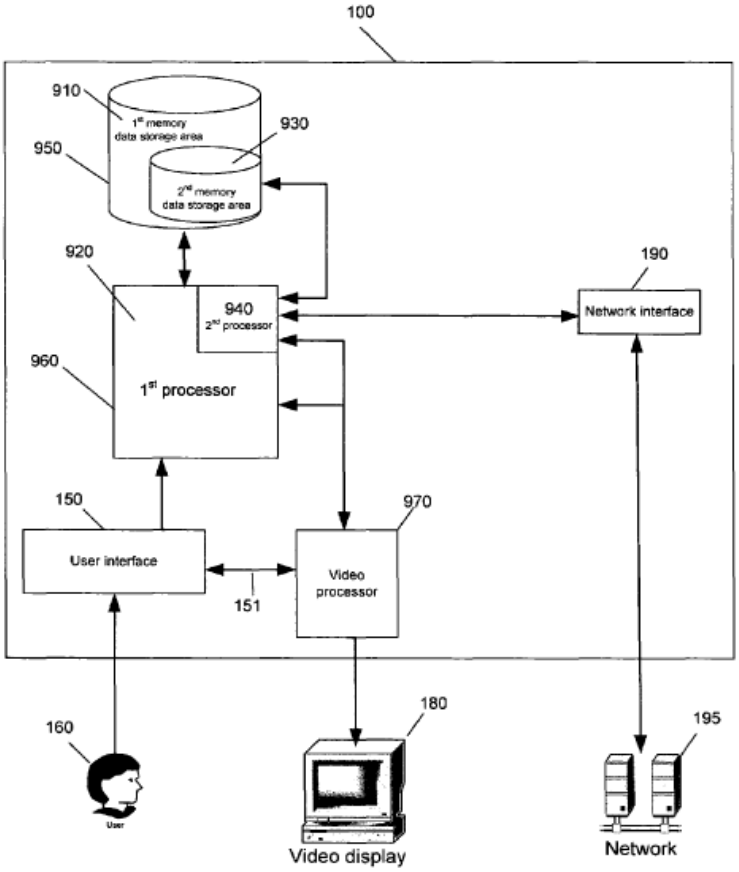

Fig. 9

27. At trial, both parties' experts agreed that although two processor cores may be on a single processor chip, each processor core still constitutes a separate processor. D.I. 264 (Trial Tr. 2/7/17 am) at 51:5-16; D.I. 268 (Trial Tr. 2/8/17 pm) at 148:2-10. Thus, Figure 9 and related text above disclose a processor chip 960 with two separate processors 920 and 940.

5. The '247 Patent's Disclosure Applies Communication Link 191 To Data Encryption

28. Column 17 of the '247 Patent describes applying the computer system 100 of Figure 1, annotated below, to encrypting data "prior to sending the data to processor P2 140, which may be running one or more malware processes." PTX-001 at 17:33-49. In this application, "[d]ecryption keys may be passed between P1 120 and network interface device 190 via a communication link 191," which is highlighted in yellow. *Id*. at 17:42-44.

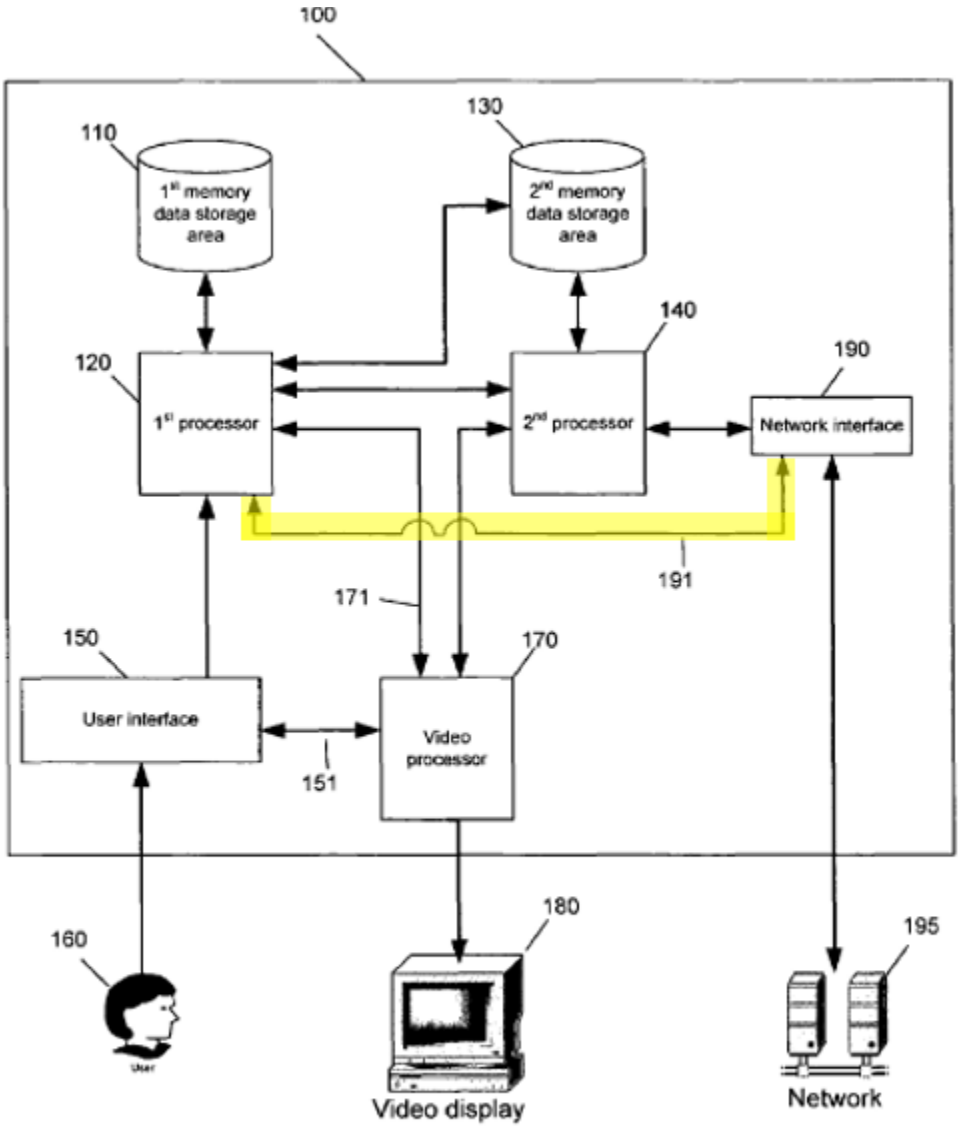

Fig. 1

29. The specification discloses that first processor P1 120 passes decryption keys to network interface device 190 to allow "[d]ata [to] be decrypted by network interface device 190 prior to forwarding the data on to network 195." *Id*. at 17:38-40. The first processor P1 120 does not send the decryption keys to the second processor P2 140 because "P2 140 . . . may be running one or more malware processes." *Id*. at 17:33-36. By sending the decryption keys using communication link 191 — which bypasses second processor P2 140, as shown in Figure 1 above

— the second processor P2 140 is prevented from having "visibility to the decryption keys, and is therefore unable to decrypt the data." *Id*. at 17:36-38.

C. Prosecution Of The Original '247 Patent

30. The application for the '247 Patent was filed on August 7, 2004. PTX-001 at cover page.

31. As discussed in Section I.B.2, the specification of the '247 Patent, which was part of the original application, describes an architecture with two processors. Nonetheless, Claims 1 and 15 in the original application encompassed using a single processor. PTX-007 ('247 Patent FH) at R00000587 (8/7/2004 Original Application at 35). Originally filed Claim 15, reproduced in part below, recited executing a "first logical process" and "second logical process" on "at least one electronic data processor."

> 15. A computer system, comprising:
>
> ***at least one electronic data processor*** capable of executing instructions;
>
> …
>
> wherein the electronic data processor, first and second memory space, and video processor are configured for performing the steps of:
>
> > executing instructions in a first logical process, wherein the first logical process is capable of accessing data contained in the first memory space and the second memory space;
> >
> > executing instructions in a second logical process, wherein the second logical process is capable of accessing data contained in the second memory space, the second logical process being further capable of exchanging data across a network of one or more computers;
> >
> > …

Id. at R00000591 (8/7/2004 Original Application at 39) (emphasis added).

32. On March 10, 2008, the Examiner issued a second and last rejection of the claims, which included finding Claim 1 anticipated by U.S. Patent No. 6,192,477 ("Corthell") and Claim

15 obvious in view of U.S. Patent Nos. 6,578,140 ("Policard") and 5,673,403 ("Brown"). *Id*. at R00000651-52, 656 (3/10/2008 Final Rejection at 3-4, 8).

33. On April 29, 2008, Plaintiffs responded by amending Claims 1 and 15 to recite at least two processors. Specifically, Plaintiffs amended Claim 1 to require "having at least a ***first and second*** electronic data processor" and Claim 15, reproduced in part below, to similarly require a "multi-processor" system with "a ***first and second*** electronic data processor":

> 15. (Currently Amended) A multi-processor computer system using a common operating system, comprising:
>
> at least a first and second [[one]] electronic data processor capable of executing instructions using the common operating system;
>
> …
>
> wherein the first and second electronic data ~~processor~~processors, first and second memory space, and video processor are configured for performing the steps of:
>
> executing instructions in a first logical process with the first electronic data processor, wherein the first logical process is executing within the common [[an]] operating system and is capable of accessing data contained in the first memory space and the second memory space;
>
> executing instructions in a second logical process with the second electronic data processor, wherein the second logical process is executing within the common operating system and is capable of accessing data contained in the second memory space, the second logical process being further capable of exchanging data across a network of one or more computers;
>
> …

Id. at R00000675-76 (4/29/2008 Amendment at 5-6); *see also id*. at R00000672.

34. In accompanying remarks, Plaintiffs relied on these amendments requiring multiple processors to distinguish the prior art identified by the Examiner — Corthell, Policard, and Brown — as each limited to a single processor. Distinguishing Corthell, Plaintiffs argued:

> ***Corthell teaches the use of a computer system using a single electronic data processor*** (Figure 1, [block 102]), utilizing a redirector (Figure 2, [block 214]) and filter (Figure 2, [block 216]) mechanism to protect against attacks by malware. ***Corthell, therefore, teaches the use of a single electronic data processor that is necessarily executing all instructions*** . . . . While Corthell does teach partitioning of the memory space into a primary partition (Figure 2, [block 204]) and a protected partition (Figure 2, [block 206]), he does not teach or suggest the partitioning of "secure" and "unsecure" instruction execution onto separate electronic data processors.
>
> ***In stark contrast, Applicants teach the use of a multi-processor computer having at least a first and second electronic data processor*** capable of executing instructions using a common operating system. The second electronic data processor is capable of being configured in a protected mode when a network process is active. (Applicants' specification, paragraph 65.) Such a configuration allows for a physical hardware separation or partitioning of instruction execution on physically separate processors (or processor cores), in contrast to Corthell's teaching of executing all instructions on a single electronic data processor.

Id. at R00000679-80 (4/29/2008 Amendments/Remarks at 9-10) (emphasis added).

35. For Policard and Brown, Plaintiffs argued the same distinction:

> Applicants understand the Examiners suggestion regarding independent claims 10 and 15, and ***have amended the claims to specify a computer system having at least a first and second electronic data processor*** capable of executing instructions using a common operating system. Additionally, Applicants have incorporated elements of amended independent claim 1 . . . into the amended claims 10 and 15, further patentably ***distinguishing claims 10 and 15 from the teachings of Policard and Brown.***

Id. at R00000685 (4/29/2008 Amendments/Remarks at 15) (emphasis added).

36. Plaintiffs therefore distinguished Corthell, Policard, and Brown on the basis that whereas those prior art references disclosed only a single processor, the '247 Patent taught a "multi-processor computer having at least a first and second electronic data processor." *Id*. at R00000679-80.

37. Plaintiffs did not state in their remarks or anywhere else in the prosecution history that the amended claims' requirement of two processors applied to only certain embodiments of the '247 Patent but not others. PTX-007 at R00000679-85.

38. At trial, both parties' witnesses — including the named inventor Mr. Cioffi and Plaintiffs' expert Dr. Dunsmore — confirmed that the Plaintiffs relied on the amended claims' requirement of at least two processors to distinguish prior art. D.I. 263 (Trial Tr. 2/6/17 pm) at 171:16-172:14 (Mr. Cioffi confirming that by "requiring two separate processors, you now could get your patent even though there was this prior art called Corthell"); D.I. 271 (Trial Tr. 2/9/17 pm) at 30:5-18 (Plaintiffs' expert Dr. Dunsmore agreeing that "the applicants, Mr. Cioffi and Mr. Rozman, were distinguishing Corthell by saying Corthell only requires one processor; we require two"); *see also* D.I. 268 (Trial Tr. 2/8/17 pm) at 147:1-148:1 (Google's expert Dr. Kogan confirming the same).

39. Also at trial, Plaintiffs' expert Dr. Dunsmore agreed that "[i]n the remarks that the applicants made distinguishing Corthell, they never stated that their amendment applied to only some embodiments of the patent but not others." D.I. 271 (Trial Tr. 2/9/17 pm) at 30:5-18.

40. On September 9, 2008, the Examiner issued a Notice of Allowance, which explicitly cited the April 29, 2005 amendments requiring multiple processors as the basis for allowance:

> [T]he Examiner agrees with the Applicant's argument that the prior art does not show a single operating system that executes on ***multiprocessors*** such that one processor handles processes from the Internet and other potentially malicious data in order to protect the file system on the other processor.

Id. at R00000709 (9/9/2008 Notice of Allowance) (emphasis added).

41. On January 27, 2009, the '247 Patent issued with claims requiring at least two processors, including both a "first electronic data processor" and a "second electronic data processor." PTX-001 ('247 Patent) at cover, Claims 1-20.

D. The Inventors Decide To Seek Reissues After Learning Of Google Chrome

42. No later than October 2009, nine months after the '247 Patent issued, the named inventors, Mr. Cioffi and Mr. Rozman, learned about the Google Chrome web browser. D.I. 263 (Trial Tr. 2/6/17 pm) at 111:17-19, 112:3-8. The inventors reviewed documentation about Chrome that described its multi-process architecture, which later formed the bases for Plaintiffs' infringement allegations in this case. *Id.* at 161:8-11, 163:25-164:6. The inventors also sent each other emails showing that the inventors were considering filing reissue claims to cover features in Chrome. D.I. 292, Exs. A-F.

43. For example, on February 17, 2010, Mr. Rozman emailed to Mr. Cioffi a link to documentation for Chrome that described features purportedly related to "restor[ing] corrupt system files from an image in the first memory space." *Id.*, Ex. A. Mr. Rozman commented that "[t]his is one of our elements to claim the chrome browser . . . Just gets better." *Id.*

44. After investigating Chrome in late 2009 and early 2010, Plaintiffs filed for reissues of the '247 Patent on March 9, 2010, starting with the reissue applications for the asserted '500 and '528 Patents. PTX-003 ('500 Patent); PTX-004 ('528 Patent). Plaintiffs filed the reissue application for the asserted '529 Patent on November 7, 2010. PTX-002 ('529 Patent).

E. The Asserted Claims Include Claim Limitations That Were Not In The '247 Patent's Issued Claims

45. As detailed below, the four Asserted Claims of the reissued Patents-in-Suit include four limitations that are not recited in the original '247 Patent's issued claims.

1. The Asserted Claims' Recitation Of ***Two*** "Web Browser Processes"

46. As discussed, the originally filed and issued claims of the '247 Patent recited two "logical processes": a "first logical process" and a "second logical process." PTX-001 at Claims 1-20.

47. All four Asserted Claims of the reissued Patents-in-Suit replace the limitations of two "logical processes" in the '247 Patent's claims with limitations requiring two "web browser processes." In particular, each claim recites a "first web browser process" and a "second web browser process."

48. The '500 Patent, Claim 43, depends from independent Claim 41, which recites:

> 41. A computer program product comprising a program code stored in a non-transitory computer readable medium operable on a portable computer and communication device capable of executing instructions using a common operating system and having at least one electronic data processor communicatively coupled to a first memory space with at least one system file and a second memory space, the portable computer and communication device including a network interface device configured to exchange data across a network of one or more computers using a wireless connection, and an intelligent cellular telephone capability with a secure web browser including ***a first web browser process and a second web browser process***, configured to:
>
> open the ***first web browser process*** within the common operating system, wherein the ***first web browser process*** is capable of accessing data of a website via the network and accessing data contained in the first memory space;
>
> open the ***second web browser process*** within the common operating system on command from the ***first web browser process***, wherein the ***second web browser process*** is capable of accessing data contained in the second memory space and is further capable of generating data;
>
> pass data from the ***first web browser process*** to the ***second web browser process***; and process data from the ***second web browser process***;
>
> wherein the at least one system file residing on the first memory space is protected from corruption by a malware process downloaded from the network and executing as part of the ***second web browser process.***

PTX-003 at Claim 41 (emphasis added).

49. The '528 Patent, Claim 5, depends from independent Claim 1, which recites:

> 1. A method of operating a computer system capable of exchanging data across a network of one or more computers and having at least a first and second electronic data processor capable of executing instructions using a common operating system, comprising:

executing a ***first web browser process***, capable of accessing data of a website via the network, in a first logical process within the common operating system using the first electronic data processor, wherein the first logical process is capable of accessing data contained in a first memory space;

executing a ***second web browser process*** in a second logical process within the common operating system using the second electronic data processor, wherein the second logical process is capable of accessing data contained in the second memory space; and

displaying data from the first logical process and the second logical process, wherein a video processor is adapted to combine data from the first and second logical processes and transmit the combined data to a display;

wherein the computer system is configured such that the second electronic data processor is operating in a protected mode and data residing on the first memory space is protected from corruption by a malware process downloaded from the network and executing as part of the ***second web browser process***.

PTX-004 at Claim 1 (emphasis added).

50. The ’528 Patent, Claim 67, depends from independent Claim 64, which recites:

64. A computer program product comprising a program code stored in a non-transitory computer readable medium operable on computer capable of executing instructions using a common operating system and having at least one electronic data processor communicatively coupled to a first and second memory space and to a network interface device configured to exchange data across a network of one or more computers and access at least one website, configured to:

store at least one system file within the first memory space;

open a ***first web browser process***, capable of accessing data of the at least one website via the network, in a first logical process, the first logical process being configured to access data contained in the first memory space;

open a ***second web browser process*** in a second logical process, the second logical process being configured to access data contained in the second memory space; and

pass data from the ***first web browser process*** to the ***second web browser process***, wherein the at least one system file residing on the first memory space is protected from corruption by a malware process downloaded from the network and executing as part of the ***second web browser process***.

Id. at Claim 64 (emphasis added).

51. The '529 Patent, Claim 49, depends from independent Claim 36, which also recites two web browser processes, a "first web browser process" and a "second secure web browser process," as excerpted below:

> 36. A method of operating a portable computer based system employing a common operating system and configured with a first memory space and a second protected memory space and at least one electronic data processor, comprising:
>
> storing at least one system file within the first memory space;
>
> downloading website content potentially containing malware from a network of one or more computers using a secure web browser process, wherein the secure web browser process is configured to execute on the at least one electronic data processor, and comprises ***a first web browser process*** and at least ***one second protected web browser process***, the ***first web browser process*** and the at least one ***second protected web browser process*** being configured to access the website content via the network of one or more computers;
>
> executing instructions in the ***first web browser process***, wherein the ***first web browser process*** is configured to access data contained in the first memory space and to initialize the at least one ***second protected web browser process***;
>
> passing data from the ***first web browser process*** to the at least one ***second protected web browser process***;
>
> executing instructions in the at least one ***second protected web browser process***, wherein the at least one ***second protected web browser process*** is configured to access data contained in the second protected memory space and to execute instructions from the downloaded website content, wherein the downloaded website content is capable of accessing the second protected memory space but is denied access to the first memory space;
>
> displaying digital content generated by the secure web browser process;
>
> wherein the secure web browser process is configured such that the at least one system file residing on the first memory space is protected from corruption by website content potentially containing malware downloaded from the network and executing as part of the at least one ***second protected web browser process***.

PTX-002 at Claim 36 (emphasis added).

52. Plaintiffs added the "web browser process" limitations during reissue proceedings for all three Patents-in-Suit to distinguish prior art. During reissue proceedings, the originally applied-for claims recited "browser process" rather than "web browser process." *E.g.*, PTX-009

('500 Patent FH) at R00001344-45 (10/13/2011 Amendment at 3-4); PTX-010 ('528 Patent FH) at R00001849 (8/29/2011 Amendment at 3); PTX-011 ('529 Patent FH) at R00002267-68 (9/8/2011 Amendment at 6-7).

53. The Examiner rejected these claims in view of U.S. Patent Application Publication No. 2002/0002673 ("Narin"), because, among other things, Narin disclosed two "browser processes." PTX-009 ('500 Patent FH) at R00001389-90 (11/17/2011 Final Rejection at 2-3); PTX-010 ('528 Patent FH) at R00001911-12 (11/14/2011 Final Rejection at 2-3); PTX-011 ('529 FH) at R00002314-15 (11/8/2011 Final Rejection at 2-3). In rejecting the claims, the Examiner specifically noted the broad scope of "browser process," explaining that "the Applicant's specification describe[s] the first logical process as being a video game and 'including but not [being] limited to a word processor,' respectively." *Id.* As a result, the Examiner found that the "claimed first logical process or first browser process could include a web browser, such as Internet Explorer or Netscape; a video game; or a word processor" and Narin's "disclosure reads on the Applicant's video game and word processor interpretations of browser. Video games are met by the prior art [Narin]'s disclosure of a secure rendering application since video games are applications that render interactive environments for users." *Id*.

54. In response to this rejection, Plaintiffs amended "browser process" in the claims to "<u>web</u> browser process" to distinguish Narin's disclosure of video game processes. PTX-009 ('500 Patent FH) at R00001459-60 (1/31/2012 Amendment at 22-23); PTX-010 ('528 Patent FH) at R00001973 (1/24/2012 Amendment at 3); PTX-011 ('529 Patent FH) at R00002388-89 (1/12/2012 Amendment at 27-28).

2. The ’500 Patent, Claim 43 And ’528 Patent, Claim 67 Encompass A Single Processor System

55. Two of the Asserted Claims, the ’500 Patent, Claim 43, and the ’528 Patent, Claim 67, do not require two or more processors and instead encompass having only a single processor.

56. The ’500 Patent, Claim 43, depends from independent Claim 41, which recites in relevant part: “A computer program product . . . having at least ***one electronic data processor*** communicatively coupled to a first memory space with at least one system file and a second memory space . . . .” PTX-003 at Claim 41.

57. The ’528 Patent, Claim 67, depends from independent Claim 64, which recites in relevant part: “A computer program product . . . having at least ***one electronic data processor*** communicatively coupled to a first and second memory space . . . .” PTX-004 at Claim 64.

58. Both parties’ experts agreed at trial that these two claims require only one processor, just like the originally filed Claims 1 and 15 of the ’247 Patent. D.I. 268 (Trial Tr. 2/8/17 pm) at 148:2-22 (Dr. Kogan’s testimony); D.I. 271 (Trial Tr. 2/9/17 pm) at 33:8-25 (Dr. Dunsmore’s testimony). For example, originally filed Claim 15 of the ’247 Patent recited in relevant part: “A computer system, comprising: at least ***one electronic data processor*** capable of executing instructions . . . .” PTX-007 (’247 Patent FH) at R00000591 (8/7/2004 Original Application at 39) (emphasis added).

59. As discussed in Section I.C, the Plaintiffs amended the originally filed claims of the ’247 Patent to require at least two processors to distinguish prior art raised by the Examiner. *Id*. at R00000672-85 (4/29/2008 Amendment at 2-15).

3. Limitations Of The ’500 Patent, Claim 43, ’528 Patent, Claim 67, And ’529 Patent, Claim 49 Recite Passing Data From The “First Web Browser Process” To The “Second Web Browser Process”

60. The Asserted Claims recite limitations relating to aspects of the two “web browser processes.” Three asserted claims — Claim 43 of the ’500 Patent; Claim 67 of the ’528 Patent; and Claim 49 of the ’529 Patent — require that the “first web browser process” “pass” “data” to the “second web browser process.”

61. Claim 43 of the ’500 Patent depends from Claim 41, which recites in relevant part: “pass data from the first web browser process to the second web browser process.” PTX-003 at Claim 41.

62. Claim 49 of the ’529 Patent depends from Claim 36, which recites in relevant part: “passing data from the first web browser process to the at least one second protected web browser process.” PTX-002 at Claim 36.

63. Claim 67 of the ’528 Patent depends from Claim 64, which recites in relevant part: “pass data from the first web browser process to the second web browser process.” PTX-004 at Claim 64.

64. At trial, Plaintiffs’ expert Dr. Dunsmore opined that in these three claims, the “data” passed from the “first web browser process” to the “second web browser process” must be “website data.” D.I. 270 (Trial Tr. 2/9/17 am) at 119:2-23.

4. ’529 Patent, Claim 49 Recites “the first web browser process is configured to . . . initialize the at least one second protected web browser process”

65. The ’529 Patent, Claim 49, recites an additional feature of the two “web browser processes,” which requires that the “first web browser” “initialize” the “second web browser process.”

66. Specifically, Claim 49 depends from Claim 36, which recites in relevant part, "executing instructions in the first web browser process, wherein the ***first web browser process is configured to*** access data contained in the first memory space and to ***initialize the at least one second protected web browser process***." PTX-002 at Claim 36.

II. PROPOSED CONCLUSIONS OF LAW

A. All Four Asserted Reissue Claims Violate The Original Patent Requirement

1. Legal Standards For The Original Patent Requirement

1. The original patent requirement derives from the reissue statute's language stating that a reissue patent must be "for the ***invention disclosed in the original patent***." 35 U.S.C. § 251(a) (emphasis added). The Federal Circuit has applied this language to require that the reissue claims be for the "same invention" as the original patent. *Antares Pharma, Inc. v. Medac Pharma Inc.*, 771 F.3d 1354, 1358-59 (Fed. Cir. 2014). A "reissue claim is for the 'same invention' if the original patent specification fully describes the claimed inventions, but not if the broader claims 'are [ ] merely suggested or indicated in the original specification.'" *Id*. at 1359 (citing *U.S. Indus. Chems., Inc. v. Carbide & Carbon Chems. Corp.*, 315 U.S. 668, 676 (1942)).

2. Because the original patent requirement compares the reissue claims to the disclosure of the original patent specification, it is "analogous to the written description requirement." *Antares*, 771 F.3d at 1362 (quotations omitted).

3. But the original patent requirement differs from the written description requirement of 35 U.S.C. § 112(1) in at least three respects.

a. First, whereas written description is a question of fact, the original patent requirement is a question of law. *Arcelormittal France v. AK Steel Corp.*, 786 F.3d 885, 888 (Fed. Cir. 2015); *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc).

b. Second, "[w]hether or not the written description requirement of § 112 [is] satisfied . . . , 'it is not enough that an invention might have been claimed in the original patent because it was suggested or indicated in the specification.'" *Antares*, 771 F.3d at 1362 (quoting *U.S. Indus. Chems.*, 315 U.S. at 676). "Rather, the specification must ***clearly and unequivocally*** disclose the newly claimed invention [of the reissue claims] as a separate invention." *Id*. (emphasis added). In fact, to satisfy the original patent requirement, the "exact embodiment claimed on reissue" must be "expressly disclosed in the specification." *Id*. at 1363. The original patent requirement is thus more demanding than the written description requirement with respect to the sufficiency of disclosure that the specification must provide.

c. Third, "the original patent requirement focuses on the ***original specification rather than the original claims***. . . . Thus, we must look to the specification." *Id.* at 1362. Whereas "the [originally filed] claims may be used to determine whether the written description requirement has been satisfied outside of the reissue context," the original patent requirement may only be satisfied by the disclosures of the original patent's specification. *Id*. (finding reissue claims invalid because "[t]he original specification here does not adequately disclose" the reissue claims' added subject matter).

4. In sum, unlike the written description requirement, to satisfy the original patent requirement, (1) the reissue claims' subject matter must be "clearly and unequivocally" disclosed and (2) that disclosure must appear in the original patent specification and cannot be satisfied with disclosures in the originally filed claims.

2. All Asserted Claims' Recitations Of Two Or More "Web Browser Processes" Violate The Original Patent Requirement

5. As discussed in Section I.E.1, all four Asserted Claims require ***two or more*** "web browser processes." PTX-003 ('500 Patent) at Claim 43; PTX-004 ('528 Patent) at Claims 5, 67; PTX-002 ('529 Patent) at Claim 49. This Court previously construed "web browser process" to mean "process that can access data on websites." D.I. 71 at 15. The Federal Circuit affirmed this construction on appeal while also finding that the "web browser process" need not be capable of accessing data on websites directly without using another web browser process. *Cioffi*, 632 F. App'x at 1021-22.

6. For the asserted claims to satisfy the original patent requirement, the original '247 Patent specification must clearly and unequivocally disclose two or more processes that can access data on websites. *Antares*, 771 F.3d at 1362. Mere suggestions or indications are insufficient; instead, the specification must disclose an "exact embodiment" with two or more processes that can access data on websites. *Id*. at 1362-63.

a. In The Only Instances Where The '247 Patent Specification Discloses Web Browsing, It Identifies Only ***One*** Web Browser Process

7. The original '247 Patent's specification does not clearly and unequivocally disclose the Asserted Claims' requirement of two or more web browser processes.

8. As an initial matter, the '247 Patent specification never uses the term "web browser process." *See* PTX-001. The specification does refer to "web browser" or "browser" programs in two instances in describing the claimed invention. But in both instances, there is only one "browser" program, and it runs on only the second processor P2 140.

9. In the first instance, the specification describes a scenario where the user accesses website data using the computer system of Figure 1:

> Computer user 160 wishes to connect to network 195 via for example, a ***browser program such as Internet Explorer or Netscape Navigator.*** Of course, other methods of connecting to network 195 may be used. User 160 inputs commands to open a protected process (e.g. a browser program in this example) at step 210. At step 220, ***1st processor 120 instructs 2nd processor 140 to initiate the protected process*** and open one or more process windows. ***Second processor 140, in conjunction with memory 130, then interacts with the network 195*** via network interface device 190, receiving and transmitting the data necessary to execute the desired protected process, ***such as browsing the internet or communication via e-mail***. Second processor 140 and memory 130 act as a separate computer system, interacting with network 195 while isolating network 195 from the first processor 120 and memory 110.

PTX-001 at 10:66-11:14 (emphasis added).

10. In this scenario, the web browser program is expressly "initiate[d]" on only the second processor 140. The second processor 140 running the web browser program then accesses the network 195 and receives and transmits data necessary to 'brows[e]' the internet." *Id.* at 11:6-11. The specification does not disclose any web browser program running on the first processor; to the contrary, it specifies that the first processor 120 "instructs" the second processor 140 to run the web browser program. Accordingly, this passage discloses only one "web browser process," not two.[1] [2]

11. The specification refers to web browsing only one other time with respect to Figure 9:

---

[1] As set forth in Google's April 16, 2018 Motion for Clarification, Google's position is that § 251 invalidity is a question of law that should be decided solely based on intrinsic evidence. D.I. 320 at 3. But if the Court will consider extrinsic evidence, Google has requested that the parties be permitted to present evidence and live witness testimony at the bench trial to provide the Court with a complete record on which to decide § 251 invalidity. *Id*. at 3-5.

[2] If the Court hears live witness testimony at the bench trial, Google expects that its expert Dr. Kogan would provide testimony supporting this conclusion, where such testimony would be consistent with and supported by Dr. Kogan's opinions set forth in the August 12, 2016 Opening Expert Report Of Dr. Michael Kogan Regarding Invalidity Of United States Patent Nos. RE43,500, RE43,528, And RE43,529 Pursuant To 35 U.S.C. §§ 112, 251, & 252 ("Kogan Expert Report") at ¶¶ 310-320.

> Referring again to FIG. 9, the functions carried out by processors 920 and 940 may comprise separate, secure logical processes executing on the same physical processor. For example, a ***first logical process*** may comprise executing instructions necessary to carry out the functions of an operating system, or the first logical process may comprise executing instructions necessary to carry out the functions of a first computer program, including but not limited to a word processor. A ***second logical process may comprise executing instructions necessary to carry out the functions of a web browser program***, or may comprise executing instructions necessary to carry out the functions of an instant messenger program, for example.

PTX-001 at 16:22-34.

12. The above passage discloses only one "web browser program," which is part of the "***second*** logical process." The "***first*** logical process," by contrast, does not comprise a web browser program but instead carries out distinct functions that do not involve accessing a network, like word processing. Accordingly, this passage also discloses only one "web browser process," not two.[3]

13. An embodiment with two or more web browser processes would also be contrary to the '247 Patent's express disclosures. The '247 Patent is not related to the design of web browsers. Instead, the '247 Patent is directed to protecting against malware using hardware isolation where, instead of allowing all software processes to execute using a single common processor, the patent proposes adding a second processor P2 140 so that any software programs that may download malware from a network (such as web browsers) run exclusively on the second processor and cannot run on the first processor P1 120. PTX-001 at 10:29-63; D.I. 268 (Trial Tr. 2/8/17 pm) at 144:12-22 (Dr. Kogan's testimony). In this way, the second processor P2 140

[3] If the Court hears live witness testimony at the bench trial, Google expects that its expert Dr. Kogan would provide testimony supporting this conclusion, where such testimony would be consistent with and supported by Dr. Kogan's opinions set forth in the Kogan Expert Report at ¶¶ 310-320.

protects and isolates the first processor P1 120 from malware downloaded from a network. *Id*. Allowing for more than one web browser process would defeat this entire proposed solution.[4]

14. Consistent with its disclosures relating to hardware isolation, and as the above passages describing Figures 1 and 9 exemplify, the specification repeatedly discloses a "first" process running on a first processor and a "second" process running on a second processor — but the specification discloses that only the ***second*** process can access website data. *E.g.*, PTX-001 ('247 Patent) at 11:2-14, 16:30-34. There is no disclosure in the '247 Patent specification, much less a clear and unequivocal disclosure, that any "***first***" process on the first processor can also access website data. Thus, there is no clear and unequivocal disclosure of ***two*** processes that can both access website data.

b. Column 14 And Figure 6 Describe Two Processors Exchanging "Status Data" For Online Computer Games, Not Two "Web Browser Processes"

15. At trial and in post-trial proceedings, Plaintiffs and their expert Dr. Dunsmore argued that certain portions of the specification disclosed two web browser processes. They first argued that text describing Figure 6 in the specification discloses that the first process can also be a "web browser process" accessing website data. Referring to "Column 14, Lines 28 through 45" of the specification, Dr. Dunsmore testified that "we have two processes, P1 and P2. And both of them are retrieving data from the network, and that's exactly what needs to be done by the processes of a web browser." D.I. 271 (Trial Tr. 2/9/17 pm) at 10:1-21. In post-trial briefing,

[4] If the Court hears live witness testimony at the bench trial, Google expects that its expert Dr. Kogan would provide testimony supporting the conclusions in this paragraph, where such testimony would be consistent with and supported by Dr. Kogan's opinions set forth in the Kogan Expert Report at ¶¶ 302-328.

Plaintiffs also asserted that the "interactive network process" described in the same passage could be used to access website data. D.I. 295 at 5-6, 9.

16. The text in column 14 cited by Plaintiffs and Dr. Dunsmore is below, with references to "P1" and "P2" and "interactive network process" and "status data" emphasized:

> In accordance with a preferred embodiment of the present invention, an exemplary process flow 600, illustrated in FIG. 6, allows an ***interactive network process***, such as online gaming, to be carried out on computer system 100. A user initiates an ***interactive network process*** via 2nd processor ***P2*** 140 (step 610). ***P2*** 140 receives ***interactive network process status data*** from network connection (step 620). ***P2*** 140 informs 1st processor ***P1*** 120 that ***interactive network process status data*** is available (step 630). ***P1*** 120 retrieves ***interactive network process status data*** from ***P2*** 140 and uses the status data to update the ***interactive network process*** and update video display (step 640). ***P1*** 120 then passes the updated ***interactive network process status data*** to P2 140 (step 650). ***P2*** 140 then sends the updated ***interactive network process status data*** to the network via network connection 195 (step 660). The exemplary process 600, or a process functionally equivalent, is carried out continuously as long as the interactive process is running.

PTX-001 at 14:28-45 (emphasis added).

17. The above passage does not support Plaintiffs' and Dr. Dunsmore's arguments. First, Plaintiffs are incorrect in arguing that elements "P1" and "P2" are "web browser processes." The specification, including above in column 14, consistently and uniformly refers to P1 and P2 as physical hardware "processors." *E.g.*, *id*. at 14:31-35 ("A user initiates an interactive network process via ***2nd processor P2 140***[.] . . . P2 140 informs ***1st processor Pl 120***" (emphasis added)). The specification first introduces P1 and P2 with respect to Figure 1, and text for Figure 1 describes these elements as "a first processor 120 (P1)" and "second processor 140 (P2)." *Id*. at 9:37-39, 10:29-37. The specification states that both P1 and P2 are "electronic data processors manufactured by" companies and may comprise a "microprocessor[,] . . . Application Specific Integrated Circuits (ASICs) or . . . Field Programmable Gate Arrays (FPGAs)." *Id*. at 9:39-47.

18. In addition, Mr. Cioffi and Dr. Dunsmore both admitted at trial that later references in the specification to P1 and P2 — including in column 14 and Figure 6 — refer to these same

physical first processor 120 and second processor 140 in Figure 1. D.I. 263 (Trial Tr. 2/6/17 pm) at 139:8-140:7; D.I. 271 (Trial Tr. 2/9/17 pm) at 37:7-38:3. Thus, "P1" and "P2" are physical processors, which are not web browser processes.

19. Second, Plaintiffs' reliance on column 14 and Figure 6 as purportedly disclosing two "web browser processes" is also misplaced because these portions of the specification have nothing to do with accessing data on websites. Dr. Dunsmore conceded that Figure 6 and related text never mention "web browser process[es]." D.I. 271 (Trial Tr. 2/9/17 pm) at 38:4-6. There is also no disclosure in column 14 or Figure 6 that the "interactive network process status data" that P1 120 retrieves from P2 140 is website data. Nor is there disclosure that the "interactive network process" is a "web browser process."

20. In fact, the specification's disclosures relating to column 14 and Figure 6 teach away from the suggestion that the "interactive network process status data" is website data, as these disclosures interchangeably refer to this "status data" as "***game*** status data." PTX-001 at 14:46-50 ("By using exemplary process 600 (or an equivalent), computer system 100 is capable of actively deciding what data to download and use, and what data to discard or scan for malware. The ***game status data*** is buffered prior to loading it onto the 110-120 system" (emphasis added)).

21. At trial, Dr. Kogan elaborated on this point, explaining that many types of data are exchanged over the Internet and that Figure 6 and related text are directed to exchanging "game data" over the Internet for "online gaming" applications, not website data for web browsing. D.I. 268 (Trial Tr. 2/8/17 pm) at 144:24-146:4.[5]

[5] If the Court hears live witness testimony at the bench trial, Google expects that its expert Dr. Kogan would provide additional testimony supporting this conclusion, where such testimony would be consistent with and supported by Dr. Kogan's opinions set forth in the Kogan Expert Report at ¶ 224.

22. Dr. Kogan's testimony is corroborated by the specification. Passages in column 14 before the passage cited by Plaintiffs explain that for online computer games, "[i]nformation about the current and new state of the game is exchanged between various users' computer systems," where the common online computer games include "Quake 3" or "Call of Duty," among other "games available that may be played interactively over a network." PTX-001 at 14:3-11. Thus, the "status data" or "game status data" referenced in the portion of column 14 cited by Plaintiffs refers to data that provides "[i]nformation about the current and new state of the game." Such game status data is not website data because, as Dr. Kogan also testified, the status data comes from a "game server" that provides "game data, not website data." D.I. 268 (Trial Tr. 2/8/17 pm) at 144:24-146:4.

23. At trial, Plaintiffs and their expert Dr. Dunsmore offered no rebuttal to Dr. Kogan's testimony that Figure 6 and column 14 are directed to online computer games, rather than browsing websites. In fact, Dr. Dunsmore conceded the point on cross-examination, confirming that Figure 6's process flow is used "to do things like run games." D.I. 271 (Trial Tr. 2/9/17 pm) at 38:1-6.

24. Third, the reissue proceedings for the Patents-in-Suit show that Plaintiffs relied on this distinction between online gaming and web browsing, and their respective types of data, to secure issuance of the asserted claims. As discussed in Section I.C, the applied-for claims of the Patents-in-Suit each originally recited "browser process" rather than "<u>web</u> browser process." PTX-009 ('500 Patent FH) at R00001344-45 (10/13/2011 Amendment at 3-4); PTX-010 ('528 Patent FH) at R00001849 (8/29/2011 Amendment at 3); PTX-011 ('529 Patent FH) at R00002267-68 (9/8/2011 Amendment at 6-7). In rejecting these claims, the Examiner noted the broad scope of "browser process," stating that the "browser process" "could include a web browser, such as Internet Explorer or Netscape; a ***video game***; or a word processor" and a prior art reference, Narin,

"reads on the Applicant's video game and word processor interpretations of browser." PTX-009 ('500 Patent FH) at R00001389-90 (11/17/2011 Final Rejection at 2-3) (emphasis added); PTX-010 ('528 Patent FH) at R00001911-12 (11/14/2011 Final Rejection at 2-3); PTX-011 ('529 FH) at R00002314-15 (11/8/2011 Final Rejection at 2-3). In response to this rejection, Plaintiffs narrowed "browser process" in the claims to "web browser process" to distinguish Narin. PTX-009 ('500 Patent FH) at R00001459-60 (1/31/2012 Amendment at 22-23); PTX-010 ('528 Patent FH) at R00001973 (1/24/2012 Amendment at 3); PTX-011 ('529 Patent FH) at R00002388-89 (1/12/2012 Amendment at 27-28). The Examiner's findings and the Plaintiffs' amendment further demonstrate that a "web browser process" is distinct from the video or computer game processes described in Figure 6 and related text in column 14.

25. The Federal Circuit similarly recognized that this reissue history distinguishes a "web browser process" from a "video game" process, stating that the "examiner felt that the first logical process described in the specification was broad enough to encompass non-web browsers such as a 'video game' and a 'word processor.' . . . In response to this rejection, Cioffi amended its claims to explicitly state that the 'first web browser' needed to be 'capable of accessing data on websites.'" *Cioffi*, 632 F. App'x at 1020-21.

26. Column 14 and Figure 6 therefore fail to disclose — much less clearly and unequivocally disclose — two "web browser processes" (*i.e.*, two processes that can access data on websites). The disclosure of column 14 and Figure 6 is unrelated to web browsing but instead directed to networked computer games, which is not web browsing and does not involve accessing website data.

c. The Specification Never Describes Using Communication Link 191 To Receive Or Access Website Data

27. In post-trial proceedings, Plaintiffs cited Mr. Cioffi's testimony that the "communication link 191" (highlighted in yellow in Figure 1, annotated below) connects the first processor (120) to the network interface (190) to argue that the "first process and the first processor also have access to the network interface device and the network." D.I. 295 at 9-10; D.I. 263 (Trial Tr. 2/6/17 pm) at 97:16-23. Plaintiffs contend that because the first process running on first processor P1 120 can access the network, it must be able to access website data like the second process running on the second processor P2 140. D.I. 295 at 9-10.

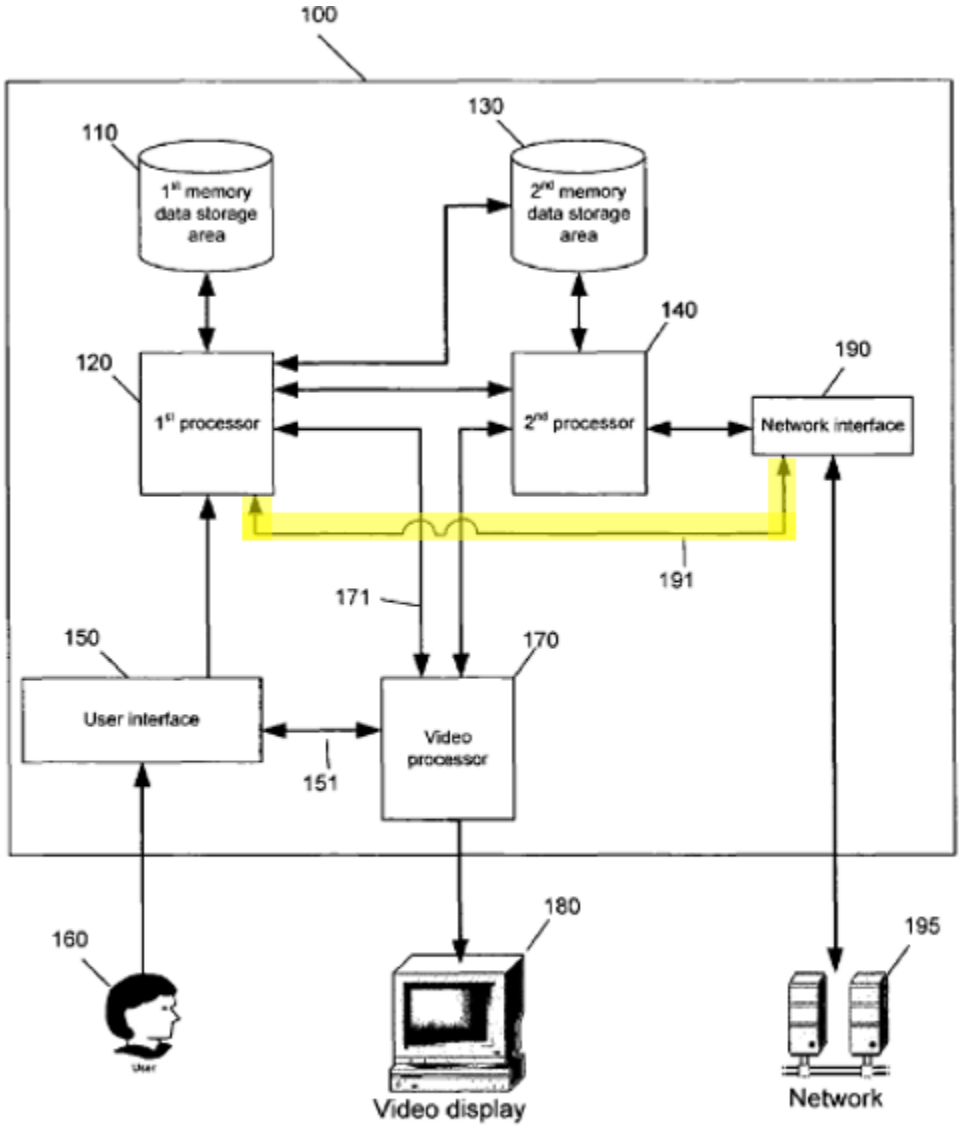

Fig. 1

28. Although Mr. Cioffi stated that the "communication line 191" gives the "first processor . . . access to the network interface device and the network," he never stated that the first processor P1 actually uses communication link 191 to access data of websites. D.I. 263 (Trial Tr. 2/6/17 pm) at 97:16-23.

29. The specification mentions communication link 191 only once as part of a scenario in which computer system 100 is used to send encrypted data:

> In accordance with a preferred embodiment of the present invention, data desired to be protected is encrypted prior to sending the data to processor P2 140, which may be running one or more malware processes. Processor P2 140 does not have visibility to the decryption keys, and is therefore unable to decrypt the data. Data may be decrypted by network interface device 190 prior to forwarding the data on to network 195. Conversely, encrypted data may be sent directly over the network for decryption by another computer system, including, for example, an internet banking host computer. ***Decryption keys may be passed between P1 120 and network interface device 190 via a communication link 191.***

PTX-001 at 17:33-44 (emphasis added).

30. As this passage describes, when first processor P1 120 wants to send sensitive user data, it (1) encrypts that data and passes the data through second processor P2 140 to network interface 190 and (2) sends "decryption keys" to network interface 190 via "communication link 191," which bypasses the second processor P2 140, as depicted in Figure 1 above. *Id*. Although the encrypted data is passed through second processor P2 140 that "may be running one or more malware processes," the second processor "does not have visibility to the decryption keys, and is therefore unable to decrypt the data." *Id*. at 17:33-38. Thus, the encrypted data passes through second processor P2 120 unharmed. The encrypted data then reaches network interface 190, which decrypts the data using the decryption keys sent separately by first processor P1 120 via communication link 191. *Id*. at 17:38-40, 17:42-44.

31. The above passage only describes first processor P1 120 using communication link 191 to exchange "decryption keys" to the network interface 190. *Id*. at 17:42-44 ("[d]ecryption keys may be passed between P1 120 and network interface device 190 via a communication link 191"). Decryption keys are not website data, and Plaintiffs have not argued otherwise, either at trial or in their post-trial briefing. *E.g.*, D.I. 295 at 9-10.

32. Moreover, while the passage's last sentence states that "[d]ecryption keys may be passed between P1 120 and network interface 190 via a communication link 191," the context of the passage makes clear that P1 120 only ***sends*** "decryption keys" to network interface 190. This

is because the passage explains that "[d]ata may be decrypted by network interface device 190," where network interface device performs decryption using the decryption keys sent from P1 120. PTX-001 at 17:38-44. Sending data is not receiving or accessing data. Thus, there is no disclosure in this passage of using the communication link 191 to ***receive or access*** website data.[6]

33. The specification therefore never clearly and unequivocally discloses that the communication link 191 is used to access website data. Accordingly, communication link 191 fails to disclose two "web browser processes" under the original patent requirement.

d. Other Parts Of The Specification Identified By Plaintiffs Do Not Clearly And Unequivocally Disclose Two "Web Browser Processes"

34. In post-trial proceedings, Plaintiffs identified two additional parts of the specification identified as disclosing two web browser processes.

35. First, Plaintiffs argue that elements "P1" and "P2" in the specification could be web browser processes. D.I. 295 at 7. But as discussed, the specification consistently and exclusively refers to P1 and P2 as physical "processors" corresponding to the "first processor 120" and "second processor 140." *See supra* Section I.B.2; *e.g.*, PTX-001 at 14:31-36. Indeed, P1 and P2 are introduced with respect to Figure 1, and text for Figure 1 describes these elements as "a first processor 120 (P1)" and "second processor 140 (P2)," which are both "electronic data processors manufactured by" companies and may comprise a "microprocessor[,] . . . Application Specific Integrated Circuits (ASICs) or . . . Field Programmable Gate Arrays (FPGAs)." PTX-001 at 9:37-

[6] If the Court hears live witness testimony at the bench trial, Google expects that its expert Dr. Kogan would provide testimony supporting this conclusion, where such testimony would be consistent with and supported by Dr. Kogan's opinions set forth in the Kogan Expert Report at ¶¶ 232-241.

47, 10:29-37. The specification discloses P1 and P2 only as physical hardware components — not software processes, let alone web browser processes.

36. Plaintiffs' post-trial briefing cited various passages of the specification that purport to disclose that P1 and P2 could be web browser processes. D.I. 295 at 7 (citing PTX-001 at 16:23-24, 16:34-43). But these cited passages, excerpted below, disclose only that "logical processes" and related "functions" are "carried out" or executed on two different processors P1 and P2. The cited passages do not disclose that P1 or P2 are themselves software processes of any kind, much less web browser processes. Instead, the passages reinforce the specification's clear distinction between the hardware processors (P1 and P2) and the software functions (logical processes) carried out on them.

> Referring again to FIG. 9, the ***functions carried out by processors 920 and 940*** may comprise separate, secure logical processes executing on the same physical processor. For example, a ***first logical process may comprise executing instructions*** necessary to carry out the functions of an operating system, or the first logical process may comprise executing instructions necessary to carry out the functions of a first computer program, including but not limited to a word processor. A ***second logical process may comprise executing instructions*** necessary to carry out the functions of a web browser program, or may comprise executing instructions necessary to carry out the functions of an instant messenger program, for example. A computer system 100 constructed in accordance with the principles of the present invention would be capable of disallowing a secure logical process, such as the second logical process described above, access to certain memory spaces, and/or disallowing a secure logical process from initiating access to another logical process. For example, ***the functions carried out by P2 140 (FIG. 1) may comprise a secure logical process***, which may be configured to be unable to automatically initiate access to either M1 110 or another ***logical process performing the functions of P1 120***.

PTX-001 at 16:22-43 (emphasis added).

37. Second, Plaintiffs argued that the specification discloses web browser processes because it discloses "logical processes," and web browser processes are a type of logical process. D.I. 295 at 8-9. But "logical processes" encompasses many types of software processes. Indeed, the '247 Patent's Claim 3 enumerates six types: "wherein the second logical process is selected

from the group consisting of: an electronic mail process, an instant messaging process, an internet browser process, an interactive gaming process, a virtual private network (VPN) process, and a reader application process." PTX-001 at Claim 3. Dr. Dunsmore also testified that "a logical process could be just about anything" running on a computer. D.I. 271 (Trial Tr. 2/9/17 pm) at 12:20-24. Thus, the specification's disclosure of two "logical processes" does not clearly and unequivocally disclose two "web browser processes" as required in the claims. Indeed, as discussed in Section I.B.2, far from clearly and unequivocally disclosing two processes that can both access network data, the specification teaches away from such an embodiment because permitting a "first logical process," which has access to the user's sensitive files in the first memory space M1, to also have network access would contravene the purpose of the claimed invention.

38. In sum, the original '247 Patent specification does not clearly and unequivocally disclose two or more "web browser processes" that can both access data on websites, as recited in all four Asserted Claims. Accordingly, all four Asserted Claims are invalid for failing to satisfy the original patent requirement.

3. Limitations Of The '500 Patent, Claim 43 And '528 Patent, Claim 67 Encompassing Just "One Processor" Violate The Original Patent Rule

39. As discussed in Section I.E.2, Claim 43 of the '500 Patent and Claim 67 of the '528 Patent encompass systems having just "one electronic data processor." For these claims to satisfy the original patent requirement, the original '247 Patent specification must clearly and unequivocally disclose a system having only one electronic data processor. *Antares*, 771 F.3d at 1362. Mere suggestions and indications are insufficient; instead, the specification must disclose an "exact embodiment" with only one electronic data processor. *Id*. at 1362-63.

40. The '247 Patent's specification does not clearly and unequivocally disclose any embodiment with just one electronic data processor. Indeed, such an embodiment would be

contrary to the stated purpose of the claimed invention. In distinguishing prior art computer systems, the '247 Patent specification contends that their "basic flaw" is using an architecture whereby "all incoming executable data files must be resident on the computers ***main processor***." PTX-001 at 6:25-27 (emphasis added). Because all files reside on only one main processor, once malware is also "resident on that processor, access may be gained to non-volatile memory and other basic computer system elements." *Id*. at 6:27-29. To overcome this flaw, the '247 Patent proposes adding a second processor P2 140 that runs unsecure processes while isolating and protecting the first processor P1 120. *Id*. at 10:29-63. Thus, having two processors — as opposed to only one processor, as in the prior art — is central to the security architecture disclosed in the '247 Patent.[7]

41. At trial and in post-trial proceedings, Plaintiffs contended that "processor 960" depicted in Figure 9 and described in column 16 of the specification discloses a single processor embodiment. D.I. 295 at 10-11; D.I. 271 (Trial Tr. 2/9/17 pm) at 6:1-7:11.

42. But Figure 9, excerpted below, depicts two processors 920 and 940 on the same physical chip 960.

[7] If the Court hears live witness testimony at the bench trial, Google expects that its expert Dr. Kogan would provide additional testimony supporting this conclusion, where such testimony would be consistent with and supported by Dr. Kogan's opinions set forth in the Kogan Expert Report at ¶¶ 153-155.

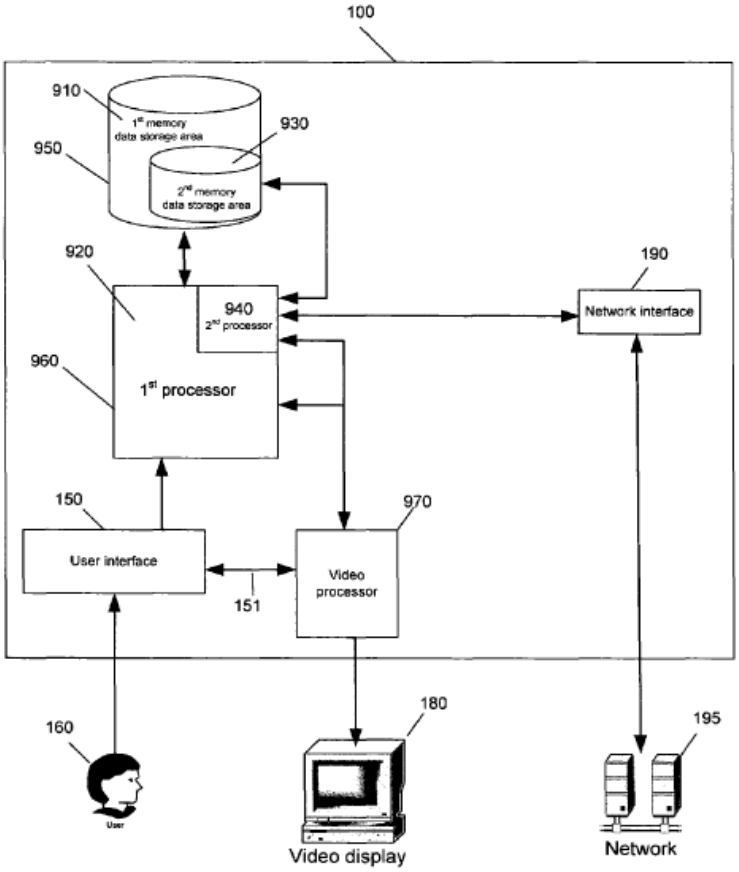

Fig. 9

43. The specification confirms: "Processor 960 may further comprise multiple processor cores, illustrated by 1st processor 920 and 2nd processor 940." PTX-001 ('247 Patent) at 16:10-12. There is no dispute that each core constitutes a separate processor. *E.g.*, D.I. 264 (Trial Tr. 2/7/17 am) at 51:5-16 (Plaintiffs' infringement expert Dr. Rubin explaining that each core "is known as a CPU, the central processing unit"). Thus, Figure 9 depicts two processors 920 and 940 on the same chip 960.[8]

[8] If the Court hears live witness testimony at the bench trial, Google expects that its expert Dr. Kogan would provide testimony supporting this conclusion, where such testimony would be consistent with and supported by Dr. Kogan's opinions set forth in the Kogan Expert Report at ¶¶ 154-155, 189-192.

44. Plaintiffs' expert Dr. Dunsmore did not disagree that elements 920 and 940 are two separate processors. But he offered three counterarguments for why the specification could be read more broadly to encompass a single processor.

45. First, he noted that the specification says "[p]rocessor 960 ***may*** further comprise multiple processor cores, illustrated by 1st processor 920 and 2nd processor 940," and argued that "may" suggests that processor 960 could alternatively have just one processor core. PTX-001 ('247 Patent) at 16:10-12 (emphasis added); D.I. 271 (Trial Tr. 2/9/17 pm) at 6:1-23.

46. But read in context, "may" is describing an example of multi-core processor 960 having exactly ***two*** cores (920 and 940). The very next sentence explains that alternatively "processor 960 may contain ***more than 2*** processor cores." PTX-001 ('247 Patent) at 16:12-13 (emphasis added). Thus, "may" in this sentence describes the possibilities of having only two cores or more than two cores, not the possibility of having only one core.

47. Further weighing against Plaintiffs' and Dr. Dunsmore's reliance on "may" is the fact that the word "may" is used 150 times in the '247 Patent specification, which is 17 columns in length. The specification's frequent use of "may" contravenes Plaintiffs' and Dr. Dunsmore's inference that "may" in column 16, lines 10-12 implies the very specific — yet not expressly described — possibility of having only one processor core. Relatedly, the use of the word "may" in column 16, lines 10-12 does not necessarily imply other possibilities that are not expressly described.

48. In addition, Dr. Dunsmore's speculation that the specification's use of "may" could suggest one core does not meet the requirements of *Antares*, which holds that the disclosure must be clear and unequivocal — "suggest[ions] or indicat[ions] in the specification" are insufficient.

771 F.3d at 1362. Figure 9 and the related text do not clearly and unequivocally disclose a single processor with one core.

49. Second, Dr. Dunsmore argued that the first sentence in the passage below discloses that processors 920 and 940 may be one processor:

> ***Referring again to FIG. 9, the functions carried out by processors 920 and 940 may comprise separate, secure logical processes executing on the same physical processor.*** For example, a first logical process may comprise executing instructions necessary to carry out the functions of an operating system, or the first logical process may comprise executing instructions necessary to carry out the functions of a first computer program, including but not limited to a word processor. A second logical process may comprise executing instructions necessary to carry out the functions of a web browser program, or may comprise executing instructions necessary to carry out the functions of an instant messenger program, for example.

PTX-001 at 16:22-34 (emphasis added); D.I. 271 (Trial Tr. 2/9/17 pm) at 6:24-7:11.

50. In particular, Dr. Dunsmore interprets the first sentence's statement, "the functions carried out by processors 920 and 940 may comprise separate, secure logical processes executing on the same physical processor," as suggesting that elements 920 and 940 could be process***es*** (rather than process***ors***) executing on the "same physical processor." PTX-001 ('247 Patent) at 16:22-24; D.I. 271 (Trial Tr. 2/9/17 pm) at 6:24-7:11. In other words, Dr. Dunsmore reads the subject of "may comprise separate, secure logical process" as the "processors 920 and 940" — not "the functions carried out by" those processors.

51. Dr. Dunsmore's reading of the first sentence is substantively and grammatically wrong. As an initial matter, the cited sentence expressly refers to elements 920 and 940 as "processors," not processes.

52. Dr. Dunsmore's reading of the first sentence is also grammatically incorrect. The subject of the sentence is the "functions," not the "processors 920 and 940." Those "functions" "carried out by processors 920 and 940" are what "may comprise separate, secure logical processes executing on the same physical processor." PTX-001 at 16:22-24. Under the correct reading, the

sentence does not state that processors 920 and 940 are "logical processes," but only that "processors 920 and 940" are used to carry out the "functions" that comprise "separate, secure logical processes."

53. Dr. Dunsmore's reading is also inconsistent with the subsequent sentences that explain that the "***first logical process*** may comprise executing instructions necessary to ***carry out the functions*** of an operating system" and the "***second logical process*** may comprise executing instructions necessary to ***carry out the functions*** of a web browser program." *Id*. at 16:24-34 (emphasis added). These sentences tie each of the first and second "logical processes" to associated "functions" that are carried out, consistent with the grammatically correct reading of the first sentence discussed above. Indeed, the sentences that follow never refer to processors 920 or 940, let alone refer to these two processors as "logical processes."

54. Accordingly, Figure 9 and related text in column 16 disclose two separate processors 920 and 940; they do not clearly and unequivocally disclose a one-processor embodiment.

55. Dr. Dunsmore's third counterargument was that originally filed "Claim 1 of the '247 patent . . . disclose[d] use of the invention on a single processor." D.I. 271 (Trial Tr. 2/9/17 pm) at 9:7-20; *see* PTX-007 at R00000587 (Claim 1). Although as discussed in Section I.C, originally filed Claim 1 of the '247 Patent did encompass a single processor, this fact is legally irrelevant because *Antares* holds that, unlike the written description requirement, the "original patent requirement focuses on the original specification rather than the original claims." 771 F.3d at 1362. Reissue claims cannot meet the original patent requirement based on the fact that their subject matter is disclosed in the originally filed claims of the original patent. *Id*. Rather, the original patent requirement can be satisfied only based on the disclosure of the original patent's

specification. *Id*. It is therefore irrelevant that originally filed Claim 1 encompassed a single processor. Instead, the relevant inquiry is whether the original '247 Patent specification discloses a single processor. As discussed above, the '247 Patent specification does not provide any clear and unequivocal disclosure of only a single processor.

56. In sum, the original '247 Patent specification does not clearly and unequivocally disclose systems or embodiments having just "one electronic data processor," as recited in Claim 43 of the '500 Patent and Claim 67 of the '528 Patent. Accordingly, these two claims are invalid for failing to satisfy the original patent requirement.

4. Limitations Of The '500 Patent, Claim 43, '528 Patent, Claim 67, And '529 Patent, Claim 49 Reciting A First Web Browser Process Passing Data To A Second Web Browser Process Violate The Original Patent Rule

57. As discussed in Section I.E.3, three of the Asserted Claims — Claim 43 of the '500 Patent; Claim 49 of the '529 Patent; and Claim 67 of the '528 Patent — require that the "first web browser process" "pass" "data" to the "second web browser process." Plaintiffs' expert Dr. Dunsmore testified that the "data" passed or exchanged must be "website data." D.I. 270 (Trial Tr. 2/9/17 am) at 119:2-23. Although Google disagrees with Dr. Dunsmore's interpretation that the "data" passed is limited to "website data," Google assumes that Dr. Dunsmore's interpretation is correct for the purposes of the § 251 analysis.

58. Under Dr. Dunsmore's interpretation, for Claims 43, 49, and 67 to satisfy the original patent requirement, the original '247 Patent specification must clearly and unequivocally disclose a first web browser process passing website data to a second web browser process. *Antares*, 771 F.3d at 1362. Mere suggestions and indications are insufficient; instead, the specification must disclose an "exact embodiment" where a first web browser process passes website data to a second web browser process. *Id*. at 1362-63.

59. There is no clear and unequivocal disclosure in the '247 Patent specification of a first web browser process passing website data to the second web browser process.[9]

60. Plaintiffs did not identify any disclosure of a first web browser process passing website data to the second web browser process during the trial.

61. In post-trial proceedings, Plaintiffs argued that "Column 14 discloses passing 'interactive network process status data' from the network between P1 and P2, and Prof. Dunsmore testified that a POSITA would interpret P1 and P2 as 'web browser processes' because both are capable of accessing website data." D.I. 295 at 13.

62. Plaintiffs' post-trial briefing appears to rely on text in column 14, describing Figure 6, which states that "P1 120 then passes the updated interactive network process status data to P2 140." PTX-001 ('247 Patent) at 14:39-40. But as discussed in Section II.A.2.b above, column 14 and Figure 6 are directed to online computer games, not web browsers. Indeed, the specification interchangeably refers to "interactive network process status data" as "game status data." *Id*. at 14:49. Earlier portions of column 14 explain that "game status data" refers to "[i]nformation about the current and new state of the game [that] is exchanged between various users' computer systems" where the "game" could refer to "Quake 3" or "Call of Duty," among other "games available that may be played interactively over a network." *Id*. at 14:7-17. The disclosed "game status data" is not website data, as discussed in Section II.A.2.b and as Dr. Kogan's unrebutted trial testimony explained. D.I. 268 (Trial Tr. 2/8/17 pm) at 144:24-146:4. Therefore, column 14 does not disclose passing website data between two web browser processes.

[9] If the Court hears live witness testimony at the bench trial, Google expects that its expert Dr. Kogan would provide testimony supporting this conclusion, where such testimony would be consistent with and supported by Dr. Kogan's opinions set forth in the Kogan Expert Report at ¶ 286.

63. Plaintiffs are also incorrect that a POSITA would interpret P1 and P2 as "web browser processes." The specification, including in column 14, consistently and uniformly refers to P1 and P2 as "processors." *E.g.*, PTX001 at 14:31-36. Indeed, P1 and P2 are first introduced with respect to Figure 1, and text for Figure 1 describes these elements as "a first processor 120 (P1)" and "second processor 140 (P2)," which are both "electronic data processors manufactured by" companies and may comprise a "microprocessor[,] . . . Application Specific Integrated Circuits (ASICs) or . . . Field Programmable Gate Arrays (FPGAs)." *Id*. at 9:37-47, 10:29-37. Mr. Cioffi and Dr. Dunsmore also admitted that subsequent references to P1 and P2 — including in column 14 and Figure 6 — refer to the same physical first processor 120 and second processor 140. D.I. 263 (Trial Tr. 2/6/17 pm) at 139:8-140:7 (Mr. Cioffi affirming that "P1" and "P2" in Figure 6 are the processors of Figure 1); D.I. 271 (Trial Tr. 2/9/17 pm) at 37:7-38:3 (Dr. Dunsmore admitting that "Figure 6 describes using the processors 120 and 140 of Figure 1").

64. The original '247 Patent specification therefore does not clearly and unequivocally disclose the "first web browser process" "pass[ing]" "data" to the "second web browser process," as recited in Claim 43 of the '500 Patent, Claim 49 of the '529 Patent, and Claim 67 of the '528 Patent. Accordingly, these three Asserted Claims are invalid for failing to satisfy the original patent requirement.

5. The '529 Patent, Claim 49's Recitation Of A First Web Browser Process Initializing A Second Web Browser Process Violates The Original Patent Rule

65. As discussed in Section I.E.4, the '529 Patent, Claim 49 requires that the "first web browser process is configured to . . . initialize the at least one second protected web browser process."

66. There is no clear and unequivocal disclosure in the '247 Patent's specification of a first web browser process configured to initialize at least one second protected web browser process.[10]

67. Plaintiffs did not identify any disclosure of a first web browser process configured to initialize at least one second protected web browser process during the trial.

68. In post-trial proceedings, Plaintiffs identified text in column 11 describing Figure 2, where a "1st processor 120 instruct[s] 2nd processor 140 to initiate the protected process and open one or more process windows," and where "the protected process may be 'browsing the internet.'" D.I. 295 at 14 (citing PTX-001 at 11:4-10). Plaintiffs also identified a similar disclosure in column 17, which states "P1 120 instruct[ing] processor P2 140 to initiate a protected process and open a process window." D.I. 295 at 14 (citing PTX-001 at 17:16-18).

69. But these passages each describe how the first ***processor*** P1 120 can initialize a web browser process on the second processor P2 140. None disclose that a "first web browser process" — as opposed to a first processor — initializes the "second web browser process." To the extent that Plaintiffs are assuming that the first processor P1 120 and second processor P2 140 could also refer to a "first web browser process" and a "second web browser process," respectively, this assumption is incorrect. As discussed in Sections I.B.2 above, the specification repeatedly and consistently refers to first processor P1 120 and second processor P2 140 as physical hardware processors. The specification never refers to P1 and P2 as software processes of any kind, let alone "web browser processes."

[10] If the Court hears live witness testimony at the bench trial, Google expects that its expert Dr. Kogan would provide testimony supporting this conclusion, where such testimony would be consistent with and supported by Dr. Kogan's opinions set forth in the Kogan Expert Report at ¶ 285.

70. The original '247 Patent specification therefore does not clearly and unequivocally disclose that the "first web browser process is configured to . . . initialize the at least one second protected web browser process" as recited in Claim 49 of the '529 Patent. Accordingly, Claim 49 of the '529 Patent is invalid for failing to satisfy the original patent requirement.

B. The '500 Patent, Claim 43 And '528 Patent, Claim 67 Are Invalid Under The Rule Against Recapture

1. Legal Standard For The Rule Against Recapture

71. Section 251's rule against recapture "prevents a patentee from regaining through reissue the subject matter that he surrendered in an effort to obtain allowance of the original claims." *In re Clement*, 131 F.3d 1464, 1468 (Fed. Cir. 1997). "Under this rule, claims that are 'broader than the original patent claims in a manner directly pertinent to the subject matter surrendered during prosecution' are impermissible." *Id.*

72. Whereas the original patent requirement focuses on the original patent's ***specification***, the rule against recapture focuses on the original patent's ***claims***. *Compare id. with Antares*, 771 F.3d at 1363.

73. "Whether the claims of a reissue patent violate" the recapture rule under "35 U.S.C. § 251, and thus are invalid, is a question of law." *In re Mostafazadeh*, 643 F.3d 1353, 1358 (Fed. Cir. 2011).

74. Courts determine violations of the rule against recapture using a three-step test:

> (1) first, we determine whether, and in what respect, the reissue claims are broader in scope than the original patent claims;
>
> (2) next, we determine whether the broader aspects of the reissue claims relate to subject matter surrendered in the original prosecution; and
>
> (3) finally, we determine whether the reissue claims were materially narrowed in other respects, so that the claims may not have been enlarged, and hence avoid the recapture rule.

Greenliant Sys. Inc. v. Xicor LLC, 692 F.3d 1261, 1267 (Fed. Cir. 2012) (quotations and citations omitted).

75. The recapture rule may not apply if the reissue claims are directed to "overlooked aspects," which are "patentably distinct (1) inventions; (2) embodiments; or (3) species not originally claimed — not mere incidental features of the originally-claimed invention." *In re Mostafazadeh*, 643 F.3d at 1360.

2. Step 1: The '500 Patent, Claim 43 And '528 Patent, Claim 67 Are Broader In That They Require Only One Processor, Rather Than At Least Two Processors As In The Original '247 Patent's Issued Claims

76. The first step of the recapture test is to "determine whether and in what 'aspect' the reissue claims are broader than the [original] patent claims." *In re Mostafazadeh*, 643 F.3d at 1358. "A reissue claim that deletes a limitation or element from the [original] patent claims is broader with respect to the modified limitation." *Id.*

77. As discussed in Section I.C, the '247 Patent's issued claims require two or more physical processors because they each recite having a "first" and a "second" "electronic data processor." PTX-001 at Claims 1-20 (Claims 1, 10, 15 are independent). By comparison, the '500 Patent, Claim 43 and '528 Patent, Claim 67 do not require two or more processors because they recite having "at least one electronic data processor." PTX-003 at Claim 43 (depends from Claim 41); PTX-004 at Claim 67 (depends from Claim 64).

78. The '500 Patent, Claim 43 and '528 Patent, Claim 67 are therefore broader than the '247 Patent issued claims with respect to the number of required processors — Claims 43 and 67 encompass systems with either a single processor or two or more processors, rather than only encompassing systems with two or more processors, as required by the '247 Patent's claims. Indeed, the two reissue claims delete the '247 Patent claims' limitation requiring at least a "second electronic data processor."

79. At trial, Plaintiffs' expert Dr. Dunsmore agreed that the '500 Patent, Claim 43 and '528 Patent, Claim 67 encompass a single processor system, whereas the '247 Patent's issued claims do not. D.I. 271 (Trial Tr. 2/9/17 pm) at 33:8-25.

80. In post-trial briefing, Plaintiffs also did not dispute these facts or that the first step of the recapture test is met. D.I. 295 at 14-23.

81. Google's expert Dr. Kogan also testified that the first step is met. D.I. 268 (Trial Tr. 2/8/17 pm) at 148:2-22.

82. The first step of the recapture test is therefore met with respect to the '500 Patent, Claim 43 and '528 Patent, Claim 67 because Claims 43 and 67 are not limited to two or more processor systems but also encompass single processor systems, whereas the '247 Patent's issued claims are limited to two or more processor systems.

3. Step 2: During Prosecution Of The '247 Patent, Plaintiffs Surrendered The Broadened Subject Matter Of One Processor

83. The second step of the recapture test is to "determine whether the broader aspects of the reissue claims relate to surrendered subject matter." *In re Mostafazadeh*, 643 F.3d at 1358 (quotations omitted). "To determine whether an applicant surrendered particular subject matter, [courts] look to the prosecution history for arguments and changes to the claims made in an effort to overcome a prior art rejection." *Id.*

84. In *North American Container, Inc. v. Plastipak Packaging, Inc.*, for example, the reissue claims covering plastic bottle structures were broadened to "no longer require the 'inner walls' to be 'generally convex.'" 415 F.3d 1335, 1350 (Fed. Cir. 2005). The Federal Circuit found this broadened subject matter was surrendered during prosecution because applicants had "amended [the claims] to refer to the convex nature of the inner wall portions" and "argued that

the 'shape of the base as now defined in the claims differs from those of . . . the [prior art] patent, wherein the corresponding wall portions are slightly concave.'" *Id*.

85. Here, the second step is met because the broadened subject matter of a single processor system was surrendered during prosecution of the original '247 Patent. To overcome the prior art references Corthell, Policard, and Brown, Plaintiffs amended originally filed Claims 1 and 15 to require at least a "first ***and second*** electronic data processor." PTX-007 ('247 Patent FH) at R00000672, 675-76 (4/29/2008 Amendment at 2, 5-6) (emphasis added).

86. In accompanying remarks, Plaintiffs relied on these amendments to distinguish the prior art, stating: "In stark contrast [to Corthell], ***Applicants teach the use of a multi-processor computer*** having at least a first and second electronic data processor," and "amend[ments to] the claims to specify a computer system ***having at least a first and second electronic data processor*** . . . distinguish[] claims 10 and 15 from the teachings of Policard and Brown." *Id*. at R00000679-80, 685 (4/29/2008 Amendments at 9-10, 15) (emphasis added). Based on these amendments and remarks, the Examiner allowed the claims because "the prior art does not show a single operating system that executes on ***multiprocessors***." *Id*. at R00000709 (9/9/2008 Notice of Allowance) (emphasis added).

87. Plaintiffs' expert Dr. Dunsmore confirmed in his jury trial testimony that the claims were amended to require two processors, and thereby surrendered one-processor systems, to distinguish prior art. D.I. 271 (Trial Tr. 2/9/17 pm) at 27:8-21.

88. Dr. Dunsmore further confirmed that these amendments surrendered all single processor embodiments in the patent. *Id*. at 30:5-18.

89. Plaintiffs also did not dispute in post-trial proceedings that the second step of the recapture test is met. D.I. 295 at 14-23.

90. Google's expert Dr. Kogan concurred in his jury trial testimony that the second step is met because Plaintiffs surrendered the subject matter of a single processor to distinguish prior art. D.I. 268 (Trial Tr. 2/8/17 pm) at 147:1-148:1.

91. The second step of the recapture test is therefore met with respect to the '500 Patent, Claim 43 and '528 Patent, Claim 67 because the '500 Patent, Claim 43's and '528 Patent, Claim 67's broadened subject matter of a single processor was surrendered during prosecution of the '247 Patent.

4. Step 3: The '500 Patent, Claim 43 And '528 Patent, Claim 67 Are Not Materially Narrowed With Respect To The Surrendered Subject Matter Of One Processor

92. Under the third step of the recapture test, "[v]iolation of the rule against recapture may be avoided . . . if the reissue claims 'materially narrow' the claims relative to the original claims such that full or substantial recapture of the subject matter surrendered during prosecution is avoided." *In re Mostafazadeh*, 643 F.3d at 1358.

93. In circumstances where "the reissue claim is broader [than the original claims] in some aspects, but narrower in others," the recapture rule bars the reissue claim "if [it] is as broad as or broader in an aspect germane to a prior art rejection, but narrower in another aspect completely unrelated to the rejection." *In re Clement*, 131 F.3d at 1470. In this third step, "the recapture rule is violated when a limitation added during prosecution [of the original patent] is ***eliminated entirely***, even if other [unrelated] narrowing limitations are added to the claim." *In re Mostafazadeh*, 643 F.3d at 1361 (emphasis added); *see also In re Youman*, 679 F.3d 1335, 1345 (Fed. Cir. 2012) ("where the patentee eliminates the added limitation in its entirety . . . [,] it is clear that the surrendered subject matter has been recaptured"). The Federal Circuit has also explained the policy motivation underlying the third step: "a limitation that is added during prosecution to

overcome prior art cannot be entirely eliminated on reissue because doing so would constitute recapture of the surrendered subject matter." *In re Mostafazadeh*, 643 F.3d at 1359.

94. Here, the '500 Patent, Claim 43 and '528 Patent, Claim 67 are barred by the recapture rule under step three. These claims encompass single-processor embodiments, eliminating entirely the limitation requiring at least a "second electronic data processor" that was added by amendment to the original '247 Patent's claims. Although Claims 43 and 67 add other new limitations, none require two or more processors. Dr. Kogan confirmed in his testimony that the reissue claims are broader with respect to the number of processors: "the claims in the original '247 patent that issued require two processors, and these claims [Claims 43 and 67] require only one processor, so . . . So these claims are actually broader." D.I. 268 (Trial Tr. 2/8/17 pm) 148:2-22.

95. Plaintiffs' expert Dr. Dunsmore agreed in his trial testimony. He affirmed that the two claims "eliminated the requirement of having two processors" and could read on systems with a single processor. D.I. 271 (Trial Tr. 2/9/17 pm) at 33:8-15.

96. Similarly, in post-trial briefing, Plaintiffs conceded that Claims 43 and 67 eliminated the requirement of two processors and require only one processor. D.I. 295 at 22.

97. At trial, however, Dr. Dunsmore opined that the third step of the recapture test is not met. He testified that the '500 Patent, Claim 43 and '528 Patent, Claim 67 narrowed the "first logical process" in the '247 Patent's claims to be a "first web browser process." *Id*. at 12:8-13:20. Dr. Dunsmore opined that this narrowing was "related" to eliminating the requirement of the second processor because "[i]n the original ['247] patent . . . one of the motivations was to keep the first process completely separate from the network." *Id*. at 12:12-15. "But when they decided to change to web browser processes [in the reissues] . . . it doesn't make any sense anymore to

have that first process isolated." *Id*. at 13:8-15. Dr. Dunsmore averred that because the reissue claims did not require isolation, it "wasn't really even appropriate to require that it have to be run on a separate processor, and so that was simply dropped because it just wasn't needed anymore." *Id*. at 13:16-20.

98. In post-trial proceedings, Plaintiffs similarly argued that the narrowing of "first logical process" in the '247 Patent's claims to "first web browser process" in the reissue claims was "related" to the surrendered subject matter of a single processor because "there was no longer a need for physical isolation from the network by the second electronic data processor." D.I. 295 at 20-23.

99. But step three of the recapture rule requires more than that the reissue claims' added limitations be "related" to the surrendered subject matter. It also requires that, with respect to the "related" subject matter, the limitations are "***materially narrow*** . . . relative to the original claims ***such that full or substantial recapture*** of the subject matter surrendered during prosecution ***is avoided***." *In re Mostafazadeh*, 643 F.3d at 1358 (emphasis added).

100. In *Mentor Corp. v. Coloplast, Inc.*, for example, the broadened and surrendered aspect of claims pertaining to condom catheters was the requirement of "transfer of adhesive from the outer to the inner layer." 998 F.2d 992, 995-96 (Fed. Cir. 1993). At the third step, the Federal Circuit found that the recapture rule barred the reissue claims because their added limitations on the catheter's material "lack[ed] the requirement of transfer of adhesive from the outer to the inner layer" and thus did "not narrow the claims in any material respect compared with their broadening." *Id*.

101. Applying the "materially narrow" requirement here, to avoid recapture under step three, the '500 Patent, Claim 43 and '528 Patent, Claim 67 must include limitations that require

the use of two or more processors as in the '247 Patent's issued claims. Only by including limitations requiring the use of two or more processors can these claims be considered "narrow[ed] . . . [in] any material respect compared with their broadening" so as to avoid "full or substantial recapture of the subject matter surrendered during prosecution." *Id*. at 995-96; *In re Mostafazadeh*, 643 F.3d at 1358.

102. Here, the amendments did not "materially narrow" the claims, and so the recapture analysis's third step is not met. In fact, on cross-examination, Dr. Dunsmore admitted that the narrowing of "logical processes" in the '247 Patent's claims to "web browser processes" in Claims 43 and 67 imposed no limitation on the number of processors that these two reissue claims require — rather, "web browser processes" could run on one or any number of processors. D.I. 271 (Trial Tr. 2/9/17 pm) at 34:19-35:18.

103. Dr. Dunsmore thus confirmed that although the '500 Patent, Claim 43 and '528 Patent, Claim 67 added limitations narrowing the types of "logical processes" to "web browser processes," these limitations do not materially narrow these reissue claims with respect to the broadened and surrendered subject matter of the required number of processors. This is because the reissue claims could encompass one or any number of processors, rather than requiring at least two processors as in the '247 Patent.

104. Dr. Dunsmore's and Plaintiffs' concessions are consistent with Dr. Kogan's testimony that the narrowing of "logical process" to "web browser process" in the reissue claims is "not related at all" to the number of processors required by those reissue claims. D.I. 268 (Trial Tr. 2/8/17 pm) at 149:2-10.

105. The prosecution histories of the '500 Patent and '528 Patent likewise confirm that the narrowing of the reissue claims to require "***web*** browser processes" was done not for any reason

relating to the number of processors, but instead to distinguish the "browser processes" disclosed in the Narin prior art reference. PTX-009 ('500 Patent FH) at R00001452-53, 59-71 (1/31/2012 Amendment at 15-16, 22-34); PTX-010 ('528 Patent FH) at R00001990-92, 1998-2014 (1/24/2012 Amendment at 20-22, 28-44).

106. In post-trial briefing, Plaintiffs argued that, during the '247 Patent's prosecution, the scope of Plaintiffs' surrender was limited to embodiments where "the first logical process was isolated from the network" and excluded "a single processor embodiment . . . with a first logical process unisolated from the network." D.I. 295 at 22-23.

107. Plaintiffs' post-trial arguments about the limited scope of surrender finds no support in the intrinsic record. The applicants never argued those distinctions in distinguishing prior art during the '247 Patent's prosecution. PTX-007 at R0000678-91. Indeed, Plaintiffs' expert Dr. Dunsmore conceded that "[i]n the remarks that the applicants made distinguishing [prior art], they never stated that their amendment applied to only some embodiments of the patent but not others." D.I. 271 (Trial Tr. 2/9/17 pm) at 30:5-18.

108. Further, Plaintiffs' argument about the scope of surrender concerns the second step of recapture, not the third step, because only the second step considers the "prosecution history for arguments and changes to the claims made in an effort to overcome a prior art rejection," whereas the third step simply compares the scope of the reissue claims to the issued claims of the original patent. *See In re Mostafazadeh*, 643 F.3d at 1358. As discussed in Section II.B.3, Plaintiffs have not disputed that the second step is met. *E.g.*, D.I. 295 at 14-22.

109. Accordingly, the third step of the recapture test is met with respect to the '500 Patent, Claim 43 and '528 Patent, Claim 67.

5. The '500 Patent, Claim 43 And '528 Patent, Claim 67 Are Not Directed To Overlooked Aspects

110. The Federal Circuit has noted that there is no need to apply the recapture rule if the reissue claims are directed to "overlooked aspects" of the invention, which are "patentably distinct (1) inventions; (2) embodiments; or (3) species ***not originally claimed***—not mere incidental features of the originally-claimed invention." *In re Mostafazadeh*, 643 F.3d at 1360 (emphasis added). "The purpose of this exception to the recapture rule is to allow the patentee to obtain through reissue a scope of protection to which he is rightfully entitled for such overlooked aspects." *Hester Indus., Inc. v. Stein, Inc.*, 142 F.3d 1472, 1483 (Fed. Cir. 2012).

111. While courts have stated that "overlooked aspects" may obviate the recapture analysis, none has ever found the recapture rule inapplicable on this basis. Courts have instead always rejected arguments that reissue claims are directed to "overlooked aspects." In *Hester Industries*, for example, the patentee sought to avoid the recapture rule by arguing that "spiral conveyance path" and "high humidity steam" limitations added to the reissue claims were overlooked aspects. *Id*. at 1483. The Federal Circuit disagreed, finding that these limitations were encompassed by the original claims, and thus "originally claimed," rather than overlooked. *Id*.

112. The Federal Circuit has also cautioned against conflating the overlooked aspects exception with the third step of the recapture rule analysis. In *In re Mostafazadeh*, the Federal Circuit found the Board erred by concluding that at the third step, "[a] limitation materially narrows the . . . claims if the narrowing limitation is directed to one or more overlooked aspects of the invention." 643 F.3d at 1360. The Federal Circuit clarified that whereas the recapture analysis applies in situations "where the reissue claims are broader than the patented claims because the surrendered subject matter has been reclaimed in whole or substantial part," the overlooked aspects exception applies in different situations where the reissue claims' subject matter is "wholly

unrelated to the subject matter that was surrendered during prosecution [of the original patent]." *Id*.

113. At trial, Plaintiffs' expert Dr. Dunsmore opined that the '500 Patent, Claim 43 and '528 Patent, Claim 67 are directed to two overlooked aspects: (1) an embodiment associated with Figure 6 in the specification where there are two "web browser processes" both "capable of accessing website data" and (2) embodiments directed to "a portable computing and communication device" or a device with "intelligent cellular telephone capability." D.I. 271 (Trial Tr. 2/9/17 pm) at 12:8-13:20, 14:12-24, 15:8-22. As discussed below, neither alleged embodiment qualifies as an overlooked aspect of the invention originally claimed in the '247 Patent.

a. Two "Web Browser Processes" Is Not An Overlooked Aspect

114. At trial, Plaintiffs' expert Dr. Dunsmore argued that whereas the claims of the '247 Patent were "directed toward logical processes" with "the first process completely separate from the network," the '500 Patent, Claim 43 and '528 Patent, Claim 67 are directed to overlooked embodiments in which the first and second logical processes of the '247 Patent are both "web browser processes" that can "access websites." D.I. 271 (Trial Tr. 2/9/17 pm) at 12:1-2, 13:7-20.

115. Dr. Dunsmore's testimony fails to demonstrate that having "two web browser processes" is an overlooked aspect for three reasons.

116. First, his contention that the inventors did not originally claim "web browser processes" during prosecution of the original '247 Patent is belied by the fact that a "web browser process" is merely a type of "logical process." As Dr. Dunsmore admitted, "a logical process could be just about anything," including "a process working with web browsers." *Id*. at 12:20-24. In fact, originally filed Claim 3 of the '247 Patent, which depended from Claim 1, recited that the "second logical process" could be "an internet browser process." PTX-007 ('247 FH) at R00000587. Dr. Dunsmore likewise testified that the "first logical process" in the originally filed

claims could also encompass a web browser process that could access website data. D.I. 271 (Trial Tr. 2/9/17 pm) at 41:6:23.

117. Thus, by broadly reciting "logical processes," the originally filed '247 Patent claims indisputably encompassed web browser processes, including a first web browser process. This subject matter was therefore "originally claimed," not overlooked. *See In re Mostafazadeh*, 643 F.3d at 1360 ("overlooked aspects" are "patentably distinct (1) inventions; (2) embodiments; or (3) species ***not originally claimed***" (emphasis added)).

118. Second, Dr. Dunsmore's assertion that Claims 43 and 67 are directed to an overlooked embodiment with two web browser processes is incorrect. As discussed in Section II.A.2 with respect to the original patent requirement, there is no embodiment in the specification with two "web browser processes." Plaintiffs identified no embodiment with two "web browser processes" at trial. Mr. Cioffi could only identify "Column 6, Line 57," as suggesting web browser processes. D.I. 263 (Trial Tr. 2/6/17 pm) at 124:4-19. But the cited text describes prior art, not the claimed invention, and refers only to a "network interface program (a browser, for example)." PTX-001 ('247 Patent) at 6:56-60. It says nothing about ***two*** "web browser processes."

119. In post-trial proceedings, Plaintiffs identified Figure 6 and related text as disclosing two "web browser processes." But as detailed in Section II.A.2.b above, Figure 6 and the related text never mention "web browser processes" and are unrelated to web browsing. They instead relate to online computer games, as Dr. Kogan explained in his unrebutted testimony. *See* PTX-

001 ('247 Patent) at Fig. 6, 14:28-54; D.I. 268 (Trial Tr. 2/8/17 pm) at 144:24-146:4 (Dr. Kogan's testimony); D.I. 271 (Trial Tr. 2/9/17 pm) at 38:4-6 (Dr. Dunsmore's testimony).[11]

120. Even if the Figure 6 embodiment disclosed two web browser processes, this subject matter was originally claimed in the '247 Patent and was not therefore overlooked.[12] *See In re Mostafazadeh*, 643 F.3d at 1360 ("overlooked aspects" are "patentably distinct (1) inventions; (2) ***embodiments***; or (3) species ***not originally claimed***" (emphasis added)). Both parties' experts agreed that the originally filed claims of the '247 Patent encompass Figure 6. Google's expert Dr. Kogan testified that "[t]hese original claims cover all of the embodiments in the specification, including Figure 1 claim, the Figure 6 claim that we looked at, and all the others that are in there as well." D.I. 268 (Trial Tr. 2/8/17 pm) at 146:20-25. Plaintiffs' expert Dr. Dunsmore concurred that there was "no limitation of original application Claim 1" or "Claim 15" that was "not disclosed in Figure 6." D.I. 271 (Trial Tr. 2/9/17 pm) at 40:12-17.[13]

[11] If the Court hears live witness testimony at the bench trial, Google expects that its expert Dr. Kogan would provide additional testimony supporting this conclusion, where such testimony would be consistent with and supported by Dr. Kogan's opinions set forth in the September 28, 2016 Deposition Of Michael Kogan, Ph.D. ("Kogan Deposition") at 190:3-194:8. Although Dr. Kogan provided these opinions on overlooked aspects in his deposition, Judge Payne previously denied Plaintiffs' motion to exclude these opinions because they were not offered in his expert report served earlier in the case. D.I. 213.

[12] To be clear, the scope of the '247 Patent's originally filed *claims* was broad enough to encompass an embodiment with two web browser processes and, as a result, Plaintiff cannot argue that this claim scope was somehow overlooked for purposes of the recapture analysis. But the '247 Patent's *specification* fails to "clearly and unequivocally disclose" any such embodiment with two web browser processes, and thus, the reissue claims fail to satisfy the original patent requirement for the reasons described in Section II.A.2.

[13] If the Court hears live witness testimony at the bench trial, Google expects that its expert Dr. Kogan would provide additional testimony supporting this conclusion, where such testimony would be consistent with and supported by Dr. Kogan's opinions set forth in the Kogan Deposition at 190:3-194:8.

121. Third, even assuming that the '247 Patent's claims did not encompass an embodiment with two web browser processes, such an embodiment is not a patentably distinct embodiment or invention from that originally claimed in the '247 Patent. The originally filed claims already recited a "second logical process" capable of accessing website data. PTX-007 ('247 FH) at R00000587 (originally filed Claims 1 and 3). Thus, changing originally filed claims to expressly encompass two web browser processes would require revising only one term, "first logical process," to a "first web browser process." This change is minor given that a "web browser process" is a type of "logical process," as Dr. Dunsmore admitted. D.I. 271 (Trial Tr. 2/9/17 pm) at 12:20-24. And this change would affect only one part of one claim element; the remainder of the original and reissue claims, which each include several elements, are substantially similar.

122. These facts distinguish, *B.E. Meyers & Co. v. United States*, 47 Fed. Cl. 200 (Fed. Cl. 2000), which Plaintiffs cited in post-trial briefing as a decision that purportedly found the recapture rule inapplicable because of overlooked aspects. D.I. 295 at 18-19. In fact, *B.E. Meyers* did not concern overlooked aspects. Rather, it concerned the second step of the recapture test. The court stated that "[t]he dispute concerns whether the broader aspects of the reissue claim attempt to recapture subject matter surrendered during the prosecution of the original patent." 47 Fed. Cl. at 206.

123. Moreover, in concluding that the second step was not met, the court in *B.E. Meyers* relied on bases that are inapplicable here. The court found that whereas the issued claims of the original patent at issue covered a "pulsing circuit," the reissue claims covered a "separate invention" of "a lens apparatus." *Id.* at 207. Specifically, the original patent's claims concerned a "pulsing circuit" with "two limitations: (1) that the circuit would pulse on and off at intervals that resulted in it being off more often than on; and (2) that the pulsing circuit, when on, would

pulse at a substantially higher level of power than it would be able to sustain if left on continuously." *Id*. at 206-07. By contrast, "plaintiff contended, and the PTO examiner ultimately agreed," that the reissue claims' subject matter of a "lens apparatus that produced a beam with a well-defined peripheral edge was in fact a separate invention eligible for patent protection, independent of whatever type of pulsing circuitry might be used." *Id.* at 207. Indeed, the patentee "delete[d] any reference to pulsing circuitry" to ensure that "the new independent reissue claims dealt only with the lens system" and had "nothing to do with any type of pulsing circuitry." *Id.* The reissue claims were therefore directed to an invention wholly unrelated and therefore patentably distinct from that of the original patent's claims.

124. Unlike in *B.E. Meyers*, here, Plaintiffs have not disputed that step two of the recapture rule is met. And reissue Claims 43 and 67 cover the same invention as the originally filed claims of the '247 Patent. Both are directed to protecting a "first memory space" by isolating malware to a "second" processor and in a "second" memory space.

125. In post-trial proceedings, Plaintiffs also asserted that the reissue claims' recitation of a "web browser process" renders them patentably distinct over the originally filed claims because during reissue proceedings, the applicants argued, and the PTO agreed, that the "web browser process" limitation of the reissue claims rendered them nonobvious over prior art. D.I. 295 at 18. But there is no authority applying the nonobviousness standard of § 103 to determine if a reissue claim is patentably distinct over an originally filed claim under § 251. At any rate, the reissue history shows merely that "web browser processes" distinguished one prior art reference, Narin — the PTO made no findings about the scope of the reissue claims versus the '247 Patent's originally filed claims. PTX-009 ('500 Patent FH) at R00001389-90 (11/17/2011 Final Rejection

at 2-3); PTX-010 ('528 Patent FH) at R00001911-12 (11/14/2011 Final Rejection at 2-3); PTX-011 ('529 FH) at R00002314-15 (11/8/2011 Final Rejection at 2-3).

126. In sum, limitations of the '500 Patent, Claim 43 and '528 Patent, Claim 67 relating to two web browser processes were originally claimed, not overlooked, and, even if they were not, these limitations are not patentably distinct from the invention claimed in the original '247 Patent. Accordingly, the '500 Patent, Claim 43's and '528 Patent, Claim 67's limitations reciting two "web browser processes" are not directed to an overlooked aspect of the claimed invention.

b. A "Cell Phone" Is Not An Overlooked Aspect

127. The second alleged overlooked aspect that Plaintiffs identify is a "cell phone" or device with "cellular telephone capability." D.I. 263 (Trial Tr. 2/6/17 pm) at 123:10-22 (Mr. Cioffi's testimony); D.I. 271 (Trial Tr. 2/9/17 pm) at 13:21-14:4 (Dr. Dunsmore's testimony). But "cell phones" were originally claimed in the '247 Patent. As their preambles recited, originally filed Claims 1 and 15 were directed to a "computer system" or "method of operating a computer system." PTX-007 ('247 FH) at R00000587, 591. The specification explains that a "computer system" in the patent can be "a communication device such as a cell phone." PTX-001 ('247 Patent) at 9:32-37. Thus, a "cell phone" was encompassed and claimed by the "computer system" recited in the originally filed claims.[14]

128. A "cell phone" is also not an overlooked aspect because it is merely an incidental feature of the '247 Patent's originally claimed invention. *In re Mostafazadeh*, 643 F.3d at 1360 ("overlooked aspects" are "patentably distinct (1) inventions; (2) embodiments; or (3) species not

[14] If the Court hears live witness testimony at the bench trial, Google expects that its expert Dr. Kogan would provide additional testimony supporting this conclusion, where such testimony would be consistent with and supported by Dr. Kogan's opinions set forth in the Kogan Deposition at 194:9-195:12.

originally claimed—***not mere incidental features of the originally-claimed invention***" (emphasis added)). Aside from mentioning that the claimed architecture can be used in a "cell phone" (among many other types of known computer devices), the specification says nothing about any purported "cellular telephone capability." When inventor Mr. Cioffi was asked at trial whether he had "invent[ed] the cell phone," he responded, "I wouldn't pretend to." D.I. 263 (Trial Tr. 2/6/17 pm) at 130:22-23. A "cell phone" is not therefore a patentably distinct "invention" of the '247 Patent; rather, it is merely an incidental feature because it is just one common type of "computer system" in which the '247 Patent's originally claimed security architecture could be used.[15]

129. Accordingly, a "cell phone" is not an overlooked aspect because it was originally claimed and is an incidental feature of the invention claimed in the original '247 Patent.

6. Conclusion On The Recapture Rule

130. For the foregoing reasons, the '500 Patent, Claim 43 and '528 Patent, Claim 67 satisfy all three steps of the test for the rule against recapture and are not directed to overlooked aspects. Therefore, the '500 Patent, Claim 43 and '528 Patent, Claim 67 are invalid for violating the rule against recapture.

[15] If the Court hears live witness testimony at the bench trial, Google expects that its expert Dr. Kogan would provide additional testimony supporting this conclusion, where such testimony would be consistent with and supported by Dr. Kogan's opinions set forth in the Kogan Deposition at 194:9-195:12.

Dated: April 30, 2018

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system per Local Rule CV-5(a)(3) on April 30, 2018.

/s/Michael E. Jones